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AN INVESTIGATION OF EARLY CHILDHOOD OUTDOOR PLAY AREAS AND  
SOCIAL AND EMOTIONAL PLAY

An Abstract of a Dissertation  
Submitted  
in Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Education

Approved:

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Dr. Linda Fitzgerald, Committee Co-Chair

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Dr. Mary Donegan-Ritter, Committee Co-Chair

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Dr. Jennifer Waldron, Dean of the Graduate College

Brandy A. Smith  
University of Northern Iowa  
December 2018

## ABSTRACT

The earliest early childhood programs were thought of as a garden for children or kindergarten (Snider, 1900). The father of kindergarten, Frederick Froebel (1885), considered the garden space critical in early childhood programs. While there is an understanding of the importance of outdoor play for young children, many current issues and challenges have drastically reduced the amount of time children spend in the outdoor environment (Kuh, Ponte, & Chau, 2013). Much of the time children do spend outside is devoted to physical movement, often in environments with traditional manufactured playground equipment (Czalczyńska-Podolska, 2014). Outdoor play holds potential for multi-dimensional (Nedovic & Morrissey, 2013) and rich play episodes (Luchs & Fikus, 2013).

The overarching goal of this study was to investigate types of children's play in early childhood programs and how the environment is related to children's play during outdoor play time. Using a mixed methods design, the type of social play and emotional engagement in play pre-school children exhibit in outdoor play environments was investigated. Children's engagement in play was based on the general social and emotional affect of children during play as well as the active play children engaged in during the play episodes. The research questions for this study were:

1. What types of emotional affect are observed in traditional and multi-dimensional outdoor play spaces?
2. What types of play behaviors are observed in traditional and multi-dimensional outdoor play spaces?

The results of this study indicate that in the multi-dimensional spaces children engaged in more positive play, assessed in both social and emotional domains of development, relative to play in the traditional spaces. Additionally, children engaged in more constructive play behavior in the multi-dimensional spaces, with more functional play occurring in traditional spaces.

The results of this study may help equip teachers and administrators with knowledge that supports the design, construction and use of multi-dimensional outdoor play environments. The findings can also inform future discussions among administrators, legislators and policy makers regarding the policies, procedures and practices that are needed to facilitate high quality outdoor learning spaces.

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Dr. Elana Joram, Committee Member

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Dr. Heather Olsen, Committee Member

Brandy A. Smith

University of Northern Iowa

December 2018

## DEDICATION

This is dedicated to my solid foundation, my husband Corey, who stands faithfully by me as I become who I know I can be. To my four beautiful and independent children, Isaac, Eli, Sam and Elle, who inspire me to keep striving, reaching, and “never settle”. To my Mom, Dad, Sister, and Grandma who are always there for me.

This is dedicated to the children who do not have a voice and the care givers that give all they have to be that voice. This is dedicated to the early childhood profession in its current and glorious infancy.

## ACKNOWLEDGMENTS

I would like to acknowledge my amazing and wonderful committee chairs, Dr. Linda Fitzgerald and Dr. Mary Donegan-Ritter. Thank you Linda for always pushing me and helping me find the best that is in me. Thank you Mary for your kindness and compassion and shining example of who I hope to be as a professor.

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## CHAPTER 1

### INTRODUCTION

#### Statement of the Problem

The earliest early childhood programs were thought of as a garden for children or kindergarten (Snider, 1900). The father of kindergarten, Frederick Froebel (1885), considered the garden space critical in early childhood programs because it was a place to explore and learn from nature. Many researchers of early childhood education have argued outdoor play is important for young children (Copple & Bredekamp, 2009; Louv, 2008). However, many current issues and challenges have resulted in children spending reduced amounts of time in the outdoor environment (Fjørtoft, 2001, 2004; Wells, 2000). Much of the time children spend outside is devoted to functional types of solitary, physical play, due to the construction and layout of contemporary playgrounds (Czalczyńska-Podolska, 2014). While studies have shown the potential outdoor play holds for multi-dimensional (Nedovic & Morrissey, 2013), social (Friedman, 2000), and highly engaged play episodes (Luchs & Fikus, 2013), more research is needed to explore emotional play of young children in outdoor play spaces.

Some researchers describe the time young children spend in the outdoor environment as a recess model, in an outdoor space with large plastic play structures on some type of man-made surfacing (Blanchet-Cohen & Elliot, 2011). This traditional playground model potentially diminishes the value of other developmental domains, placing high value on the physical aspects of development and diminishing the great

potential the outdoor space affords for the social, emotional and intellectual domains (Czalczyńska-Podolska, 2014). While some research has shown richer informal learning opportunities come from environments that move away from concrete and plastic structures, to varied play spaces, such as outdoor facilities that provide a greater number of learning possibilities for children (Adams, 1993; Blanchet-Cohen & Elliot, 2011), more investigation about social and emotional domains of learning in different outdoor spaces is needed.

Rivkin and Schein (2014) wrote about the many challenges related to outdoor play for children today. These challenges include dwindling outdoor space, the ever-increasing busy lives of children, and the loss of recess. Further coupled with the continual increase of screen or device time, many children's experiences with nature may be second hand through video or television (Casey, 2007). This screen time now competes with, and often dominates, the time children engage in creative and social play (Vickerius & Sandberg, 2006). In his book, *Last Child in the Woods*, Richard Louv (2008) argued that the combination of these trends coupled with other factors results in a Nature Deficit Disorder, characterizing children today. Louv's argument highlights the need for more research exploring how specifically children are playing in their outdoor preschool environments and if different types of outdoor play environments vary play behaviors.

### Play and Young Children

For this study play is considered as the active, child-centered behavior (Fein, 1981) that helps children make meaning of the world around them as they explore

(Smilansky, 1968) their environment. Exploration of different stages of play as defined by Parten (1932) and Smilansky (1968) guided the analysis of engagement for children during outdoor play times and informed the examination of play episodes of the children observed.

Parten's studies (1932) established different stages of play in her research on 2-through 4-and-a-half-year-old children. While children might participate in multiple levels of the following play stages, generally younger children play in more solitary or parallel play, while older preschool children play in more social and cooperative ways. As children move to higher levels of play, the need for multi-dimensional play environments becomes more important, as children interact more with the items and environment around them.

- Unoccupied play involves the child looking at others around him in momentary bits of interest, but does not focus on specific groups of children.
- Onlooker play occurs when the child watches and observes other specific groups of children playing but does not attempt to participate. The child might attempt to communicate with children she is observing.
- Solitary play happens as the child plays alone and in isolation. The child independently chooses what he or she is playing with, but makes no attempt to communicate with other children in play episode.
- Parallel play takes place as the child plays alongside other children, without deliberate interactions or attempts to play specifically with any one child.



- Associative play involves the child playing directly with other children, sharing toys and materials. Although children may communicate and interact, there is not a specific goal or end task to their play behaviors.
- Cooperative play happens as the child plays in organized group manner with other children. During cooperative play the child has a specific play purpose or goal.

Smilansky (1968) also described stages of play children go through, detailing how play allows children to imitate the world around them and imagine what they can do. Play helps children develop in all domains and make meaning of the world around them as they explore and recreate what they see. Through play children learn to control their emotions and navigate relationships with others. Smilansky discussed sociodramatic play and the critical role to children's social development. Specifically, as children imitate and use words, they strengthen their language development. Smilansky's sequence of stages are:

- In functional play children explore muscular activities that come naturally as they develop and mature. In this stage children repeat and imitate actions which help to lay the foundation for language articulation. This stage allows children to learn skills and test physical limits.
- During the constructive play stage the child moves to creative play and wants to utilize a variety of play materials. Children play for longer periods of time and have specific intention to their play.

- In the dramatic play stage children move to more symbolic type of play as children begin to display physical, social and creative personal tendencies. Children start to act out what it means to grow and take on adult responsibilities.
- The final and most advanced stage of sociodramatic play is games-with-rules, when children learn to accept rules and adjust to the parameters of those rules.

In a comprehensive review Fein (1981) considered the detail of child development in relation to pretend play. While early childhood theorists have differences in opinion about the stage of pretend play and when elements of play emerge and extinguish, many agree pretend play is a critical element to child development and emotional regulation. Play is a vital element in early childhood programs, as play helps children participate in active, child-centered activities. Fein further explored the need for careful consideration of the play environment as a key component to pretend play opportunities for young children.

A multi-dimensional environment that allows for a variety of play options helps children enhance and build their play opportunities (Copple & Bredekamp, 2009).

Copple and Bredekamp (2009), authors of *Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8*, recommended Early Childhood teachers “provide children with extended blocks of time in which to engage in sustained play, investigation, exploration, and interactions” (p. 18).

### Social and Emotional Development of Young Children

According to Vygotsky (1978) the construction of knowledge is best done in a social situation, not in isolation, and through a synthesis of interdisciplinary learning. Vygotsky (1933) emphasized we must take children's needs into account when considering play activities, specifically "without consideration of the child's needs, inclinations, incentive, and motives to act there will never be any advance from one stage to the next" (Vygotsky, 1933, p. 2). Children's learning comes from child-centered, active play. When teachers view play from a child-centered perspective, the teacher supports the interest of the child. Vygotsky (1978) said play assists in the interrelated dance of learning and development in children, from birth through childhood. An amazing phenomenon occurs in play in which "a child always behaves beyond his average age, above his daily behavior; in play it is as though he is a head taller than himself" (Vygotsky, 1978, p. 102).

Vygotsky (1933) believed while play is not the predominant activity, it is the main source of development for children during preschool. During preschool years children start to explore and express their desires and tendencies, which they may not have realized to this point of life. The need to explore and express these desires comes as an immediate need to fulfill the desire and help children realize what is in their consciousness. Play is the basis for abstract thought and problem solving. "Play is converted to internal processes at school age, going over to internal speech, logical memory, and abstract thought" (Vygotsky, 1933, p. 12). While children must understand

cognitive processes, they must also understand how to make sense and meaning of the world, which begins from early play experiences.

When children engage in uninterrupted, child-centered or free play, the learning is interdisciplinary, often addressing social, emotional, and at times, physical learning domains, and allows students to synthesize experiences (Adams, 1993; Jones & Kahn, 2018; Piaget, 1973; Vickerius & Sandberg, 2006). Environments with multi-dimensional play opportunities offer the best option for engaged free play and allow more possibilities for children to explore. This play and exploration allow children to develop the full range of social, emotional, cognitive, and physical development (Jones & Kahn, 2018). Play helps develop important 21<sup>st</sup> century skills such as executive functioning, creativity, problem solving and collaboration (Yogman, Garner, Hutchison, Hirsh-Pasek, & Gonlinkoff, 2018).

Egan (1985) promoted the critical areas of imaginative and free play in early childhood as he detailed the need children have in practicing their oral skills. Historically, educational theorists and educators focused on what children cannot do rather than what they can do. For example, reading and writing skills are stressed in early childhood programs, rather than concentrating on developing children's oral skills at a richer level. In the process of trying to teach children skills such as reading and writing at younger and younger ages the deeper development of oral skills can be lost. Children see the world as large and glorious, but lose this sense of wonder when forced into narrow skill development. Egan emphasized that children gravitate toward natural elements, such as stories and songs with animals and nature, suggesting this is not casual

or insignificant, but critical in development and intelligence. Educators might consider how to bring to life, expand and build on educational schemas in early childhood, not stifle them. Educators can assure that children “need not lose the vividness of early perception and mental life, but we will surely not retain and develop it if we very largely ignore it and fail to recognize its power” (Egan, 1985, p. 24).

### Environment and Young Children

A critical piece to optimal child development is the environment where play occurs (Gandini, 2012), where children can engage in long periods of free play (Copple & Bredekamp, 2009). Well-constructed outdoor environments afford opportunity for long periods of engaged free play. Gibson (1979) considered the environment through affordances, defined as a relationship of an object or environment and person or thing and how the object or environment is utilized for a result. A small rock is an object to throw, while a large rock may afford a bench for sitting or platform for jumping.

Heft (1988) specifically considered affordance with children. He said children use an environment or object because of how they perceive it should be utilized. While an environment or object may have multiple affordances, children establish behaviors with the environment to create function. Experience with the environment may entail functional possibilities and limitations. Affordances can be examined in three stages of potential, perceived, actualized use and children use items in specific ways because of pressure to conform to predetermined use. The affordance of a playground slide can illustrate these three stages. A standard slide might have the potential use to be a means of sliding down or climbing up. The perceived use of a slide for many adults is thought

of for sliding down, leading to the actualized use on many playgrounds of only sliding down slides. While a slide has potential affordances of a device for going up or down, the pressure to assure safety of children has led to the actualized use on most playgrounds of going down.

The outdoor space has always been a consideration in early childhood programs (Wellhousen, 2002). The earliest early childhood programs were thought of as a garden for children, which is the meaning of the German word, “kindergarten” (Snider, 1900). Frederick Froebel (1885), the father of kindergarten, considered the garden space critical in early childhood programs. He believed children learn in a hands-on manner, working directly in their environment. Froebel felt there should be unity between child, teacher and environment to optimize experiences and learning for young children. The environment included not only the physical space but also the people that surround children’s environments (Kibor, 2004). Present day model early childhood approaches, including those based on Maria Montessori and the municipality of Reggio Emilia, emphasize the critical importance of nature and the outdoor environments to early childhood programs (Hawkins, 2012; Montessori & Chattin-McNichols, 1995).

Another critical notion for children in the outdoor environment is the belief that a child learns as a whole child, not just cognitively or academically (Ramstetter, Murray, & Garner, 2010). According to this perspective, children learn holistically in the social, emotional, intellectual, and physical domains of development. While early childhood programs often take thoughtful consideration of the development that takes place in the social, emotional, physical and intellectual domains in the indoor environment, less

consideration is given to the outdoor environment (Maynard & Waters, 2007). A holistic approach to play helps improve children's attention spans and social learning and can improve positive affect for young children (Burdette & Whitaker, 2005b).

With the influx of voluntary preschool programs over the last decade, the early childhood outdoor space has taken on new dimensions. Often these voluntary preschool programs are housed in public school buildings that were originally designed for older children. At the inception of the Statewide Voluntary Preschool Program in 2007-2008 school year, 67 Iowa school districts participated with 5,126 children. In the 2015-2016 school year, 322 school districts participated with 23,141 children in attendance (Iowa Department of Education, 2010b, 2016). These public school outdoor spaces often follow a recess model, a time spent outside on a playground with traditional playground equipment. This time has no planned curriculum and is a time for children to engage in physical activity.

Children's general physical activity requirement is typically fulfilled during recess time in schools. In the state of Iowa children "require 30 minutes of physical activity per day for grades K-6" (Iowa Code 256.11(6), 2009, p. 3). The Iowa Association of School Board's Wellness Policy (2010a) recommends a "20 minute recess of moderate to vigorous activity per day." While neither of these recommendations addresses social or emotional domains during this time period, the Iowa Code says the school "shall not reduce instructional time for academic courses in order to meet the requirements" (Iowa Code 256.11(6), 2009, p. 4). This code gives schools option to

reduce or eliminate outdoor time, minimizing or possibly negating the time for any outdoor play time.

### Goal of this Study

With the research-based understanding we have about the benefits of outdoor free play in natural spaces, the overarching goal of this study was to investigate types of children's play in early childhood programs and how the environment is related to children's play during outdoor play time. Specific observations involved emotional affect and social play of children. Using a mixed methods design, the type of play and duration of engagement in play pre-school children exhibit in outdoor play environments was investigated. Children's engagement in play was based on the general social and emotional affect of children during play as well as the active play children engaged in during the play episodes. While research suggests that natural environments are optimal for outdoor play (Czalczyńska-Podolska, 2014; Kuh et al., 2013; Luchs & Fikus, 2013; Mårtensson et al., 2009; Miranda, Larrea, Muela, & Barandiaran, 2016), the current reality is many programs are housed in public school with traditional play spaces (Iowa Department of Education, 2010b, 2016).

Most studies of early childhood outdoor spaces focus either on the physical development of young children (Bjørgen, 2016; Burdette & Whitaker, 2005a; Clements, 2004; Fjørtoft, 2001, 2004; Perry, Ackert, Sallis, Glanz, & Saelens, 2016) or compare children's development as a program transitions from a traditional play space to a multi-dimensional space (Czalczyńska-Podolska, 2014; Kuh et al., 2013; Luchs & Fikus, 2013; Mårtensson et al., 2009; Miranda et al., 2016). Research about social play and emotional



affect in outdoor settings is absent in the field. The focus of this study was the play of preschool children in preschool outdoor play spaces, some traditional and some multi-dimensional.

### Significance of the Study

Some educators and researchers argue that the amount of time children spend in outdoor play is being replaced by sedentary, indoor activities (Perry et al., 2016). There is research indicating this trend is contributing to increased obesity in children (Downing, Hnatiuk, & Hesketh, 2015; Kimbro, Brooks-Gunn, & McLanahan, 2011), solitary play behaviors (Blanchet-Cohen & Elliot, 2011), and reduced abilities for long periods of concentration (Wells & Evans, 2003). Many early childhood educators understand the need for long periods of engaged free play (Copple & Bredekamp, 2009). Research suggests well-constructed outdoor environments are an optimal environment for this type of play (Copple & Bredekamp, 2009). While research shows children gain more play value across all developmental domains from outdoor play areas that deliberately include natural elements in their settings, such as trees, bushes, grasses, rocks, and natural loose parts (Bjørgen, 2016; Herrington & Brussoni, 2015; Kuh et al., 2013; Luchs & Fikus, 2013), these types of spaces are not a current reality for many children today (Czalczyńska-Podolska, 2014). In this study children's play on both traditional and multi-dimensional outdoor play setting was investigated.

Whereas there is a growing body of research around the importance of outdoor play for young children, a majority of the studies focus on physical development (Bjørgen, 2016; Hu, Li, De Marco & Chen, 2015; Luchs & Fikus, 2013). Some research

has found children's physical abilities develop at greater levels when they are allowed to play and explore in natural settings compared to more traditional play areas (Fjørtoft, 2001, 2004). The study reported here instead was focused on the less researched social and emotional areas of development.

Doctors and researchers say learning that happens in the outdoor environment is critical to optimal development and growth in young children (American Academy of Pediatrics, 2012; Spencer & Wright, 2014). However studies have shown a majority of the focus for children's time in school is on the formal curriculum or specific academic time (Bowdon & Desimone, 2014). Social and emotional learning happens during unstructured periods and in the informal curriculum of the school day, which research has shown occurs in the less structured times of the day when children are allowed to socialize, play, and explore freely (Adams, 1993).

## CHAPTER 2

### SUMMARY OF THE LITERATURE

While current research has not ignored the outdoor play environments in early childhood programs, the research is sparse with heavy focus on physical development of children's outdoor play. This chapter will first examine the current realities of outdoor environments in early childhood programs, specifically research around traditional and multi-dimensional spaces. Current trends happening with young children and outdoor environments will be explored, in addition to what is currently known about how outdoor environments are related to children's play. The chapter will conclude with detail on what in this study specifically was investigated.

#### Early Childhood Outdoor Environments

##### Current State of Outdoor Play Areas in Early Childhood Programs

Herrington (2008) examined early childhood teachers' perceptions of their center's outdoor environments. The researcher conducted focus group interviews with 78 Canadian early childhood educators, asking about the successes and challenges of outdoor spaces. The goal of the research was to gain a better understanding of the teachers' perspectives of outdoor spaces in childcare centers. The centers with plant materials in the outdoor space had more positive comments about the space than centers without plant materials, suggesting early childhood programs might include plant materials when improving outdoor space. Programs with outdoor spaces open to public had the least positive comments, largely due to the challenge of keeping outdoor spaces clean and the need for high fences to keep play areas safe. A majority of the centers

wanted more outdoor space and play equipment with more challenges for large motor skills.

These findings contradict Maynard and Waters (2007) who found teachers were cautious about outdoor equipment and space that might pose risks to children.

Researchers conducted teacher interviews and child observations in four early childhood programs in Wales. While the teachers understood children like being outside and the sense of freedom they get from outdoor time, they did not like the advanced planning that came with doing specific outdoor activities. The teachers in this study were not sure of learning benefits from being outside and were concerned with extra risks that come from being outside. Activities these teachers did outside were focused on skill building and tended to be supervisory rather than facilitative.

#### Traditional Outdoor Play Areas

The traditional playground model diminishes the value of several developmental domains, placing high value on the physical aspects of development yet neglecting the great potential the outdoor space yields for the social, emotional and intellectual domains (Czalczyńska-Podolska, 2014). The time young children spend in the outdoor environment is traditionally considered within a recess model. This model calls to mind large plastic play structures on some type of man-made surfacing (Blanchet-Cohen & Elliot, 2011). The word recess is often the word associated with going outside in a school setting (Copple & Bredekamp, 2009).

Czalczyńska-Podolska (2014) found while traditional composite play structures are designed to promote physical play, this is not always the case. Children often play on

composite structures by entering and exiting equipment or as a congregating place in order to move to another space. The equipment designed for single use play (i.e., stand-alone slides, swings) showed highest forms of physical play. Hart and Sheehan (1986) also found children play in a more functional manner (Smilansky, 1968) on traditional playgrounds.

Although some early childhood programs have gone far beyond this traditional model, it is the practical model still served in many programs (Drown & Christensen, 2014). Olsen and Smith (2017) found that while 89% of outdoor preschool spaces have slides and 82% climbers, only 40% had dramatic play materials and 59% had open grass area for children to run freely. Dramatic play materials were considered elements children could utilize in dramatic play such as a play house, stage, or props to support dramatic play. An open grass area was a space in which a large group of ten or more children could easily and safely play an active game.

A trend that is making its way into traditional preschool recess models is the reduced time outside to accommodate for more academic time (American Academy of Pediatrics, 2012). If a preschool only operates for three or four hours in a day, often the time spent outside is reduced to a minimum level to accommodate all the other academic skills required of a program. Exacerbating this trend is that in some early childhood programs the practice of reducing or taking outdoor time away for punishment to young children is common (Ramstetter et al., 2010).

Drawing from these resources helped shape the definition of a traditional outdoor space for the purpose of this study. The traditional outdoor space refers to a defined

space with large playground equipment and artificial surfacing under that equipment (i.e., wood chips, artificial turf, pea gravel, or solid rubberized product). While the space may have basic natural elements such as grass, wood chips or rocks, the natural elements to which children have direct exposure is minimal.

### Multi-Dimensional Play Spaces

There are many playgrounds in early childhood programs that adhere to specific standards required for safety, but do not consider other qualities of potential value to young children (Jansson & Persson, 2010). Richer informal learning opportunities come from environments that move away from hard concrete and plastic structures, to varied play spaces, such as outdoor facilities that provide a greater number of learning possibilities for children (Adams, 1993; Blanchet-Cohen & Elliot, 2011). These types of spaces are called by many different terms such as contemporary or natural (Kuh et al., 2013). In the literature review, the term natural is used if that is what the author called the play space in the research article. However, for the purposes of items specific to this study these play spaces will be called multi-dimensional. These spaces contain natural elements and person-made objects children can explore and manipulate. While these elements might be natural items such as sand, water, pine cones and rocks, teachers may have enhanced the outdoor space with dramatic play materials, literacy materials or other open-ended toys.

### Environment as a Third Teacher

First coined in the Reggio Emilia approach, the environment is a critical element of learning in early childhood and often is called the third teacher (Gandini, 2012).

Learning environments for children are often constructed with little consideration to the specific developmental needs of the child, especially in the outdoor space of early childhood programs (Louv, 2008). Studies show learning environments, indoor or outdoor, can be constructed to allow children wide ranges of experiences (Blanchet-Cohen & Elliot, 2011). Careful planning and consideration of key elements can help spark the children's interest (Kuh et al., 2013).

#### Current Trends with Young Children and Outdoor Environments

Although many understand the benefits of children spending time in outdoor environments, several current issues and challenges exist related to the amount of time children spend in the outdoor environment (Kuh et al., 2013; Perry et al., 2016).

Advances in technology have paved a path for greater amounts of electronic device time for children, leading to more sedentary play behaviors for children (Blanchet-Cohen & Elliot, 2011; Clements, 2004; Louv, 2008). This type of play tends to be spent inside, leading to waning amounts of outdoor play for young children (Tremblay et al., 2015). Logically, the erosion of outdoor playtime may be related to the disappearing amount of time young children spend in uninterrupted free play (Jacobson, 2008).

Burdette and Whitaker's (2005a) study brought more light to the relationship between the amount of time children spend in sedentary behavior (i.e., television watching), time spent outside, and obesity in young children. In this research, 3,141 preschool children were studied through cross-sectional surveys administered to the children's mothers. The researchers hypothesized preschool children would have higher prevalence of obesity, spend less time playing outdoors, and watch more television in

neighborhoods perceived as unsafe by mothers. Results found that children's television viewing time was higher in neighborhoods where mothers felt playgrounds and the outdoors were unsafe, but the body mass index (BMI) levels of these children were not higher than children in safer neighborhoods. While these researchers could not find direct correlations between sedentary behavior, outdoor time and obesity, the authors suggested the unhealthy sedentary behaviors and lack of outdoor time at a young age teach children the unhealthy habits that lead to obesity as the children grow.

Clements (2004) surveyed 830 mothers from across the United States and found concerning trends in children's outdoor play. The children ranged in age from 3-12 years and represented rural and urban populations. Mothers understood the cognitive, social, and emotional benefits their children received from outdoor play; however, sedentary indoor activities, such as television watching and video game play, reduced the amount of time their children spent outside. Eighty-five percent of the mothers reported their children spent less time outside than they had a few years ago. Seventy percent of the mothers said they had played outside daily as children, compared to 30% of their own children who played outside daily. For the mothers who had played outside, 56% of the mothers had played three or more hours outside daily, while only 22% of their children played outside three or more hours daily. Even the time spent outside is changing. While children still play games outside, games are played with less creativity and make-believe, and are less-child centered. When considering activities such as exploring nature, climbing trees, going to playground, imagination and make believe, jump rope and hopscotch, the majority of the mothers from the survey had played these types of



activities more than their children, whereas children today play more organized team sports compared to a generation ago.

Additional challenges related to outdoor play include dwindling outdoor space, the ever-increasing busy lives of children, and the loss of recess (Rivkin & Schein, 2014). Further coupled with the continual increase of screen or device time, many experiences children have with nature may be second-hand through video or television (Casey, 2007). This screen time now competes with, and often dominates over, the time children engage in creative and social play (Vickerius & Sandberg, 2006).

Maynard and Waters (2007) found teacher knowledge and attitudes about outdoor environments to be another barrier to the amount of time children spend in the outdoor environment. The researchers conducted semi-structured interviews and direct observation across four primary schools in Wales. The interviews focused on teachers' perceptions on utilization of the outdoor space, while the observations were done to consider reality of how teachers utilized the outdoor space. While teachers fondly remembered playing outside freely without supervision when they were children and agreed children like the sense of freedom from being outside, teachers realized constraints to free outdoor play for students. Teachers eschewed the advanced planning associated with doing specific outdoor activities, and acknowledged the outdoor environments of their buildings were not always conducive to easy access. Teachers were not confident in the learning benefits accomplished from being outside and were concerned with extra risks and parent complaints that comes in the outdoor environment.

Concerns and challenges such as these can further hinder the enthusiasm for creating and utilizing naturally based outdoor environments in early childhood programs.

Czalczynska-Podolska (2014) found in an observational study of ten contemporary playgrounds that many outdoor public play structures are composite equipment designed for gross-motor play, which promote functional play. This study had 2,212 unobtrusive, nonconsensual ten-minute observations of different play zones in contemporary playgrounds. The observer would conduct one observation in a pre-designated play zone and then move to another play zone for additional observation. The study showed 69.4% of the play was functional compared to 34% social play. These observation segments showed playground structures promote higher levels of solitary play and did not encourage pretend play. In contrast, when open spaces are available in public play environments, children play in more diverse ways, socially, functionally, and in pretend play. These open areas also promote long durations of play time. The observations showed duration of play increased when the open spaces had areas of definition or enclosures (i.e., adding an umbrella or shade structure). Children congregated or utilized playhouses specifically designed for pretend play in this study, attributed to the lack of dramatic play materials or loose parts in these play spaces.

#### Current Early Childhood Assessment and Classroom Management Tools

Many assessments and indicators aid early childhood teachers in creating and planning the indoor environment; however a void exists for assessments and indicators to assist teachers in understanding how to create and utilize the outdoor environment in the early childhood field (Luchs & Fikus, 2013). Educators and researchers struggle to find

indicators and assessments for the outdoor environment. A highly regarded early play study, Parten's (1932) social participation study, specifically mentioned the researchers observed little in outdoor spaces, as there was concern different elements in the outdoor environment would impact the results of the study. Parten's study was conducted from October to June. During the winter months the children played inside and no observations were recorded in the outdoor space. When the weather warmed and the children started playing outside, observations did not continue for outdoor play, specifically because "elements might enter into outside play which did not exist in indoor play" (Parten, 1932, p. 247).

The *Classroom Assessment Scoring System (CLASS)*, which focuses on teacher-child interactions, requires observers to stop observations when taking children outside (Pianta, LaParo, & Hamre, 2008). The latest edition of the *Early Childhood Environment Rating Scale-Third Edition* included fewer outdoor indicators than the previous edition, putting more of a focus on safety in the outdoor environment rather than considering the outdoor space as an extension of the indoor classroom (Harms, Clifford, & Cryer, 2005, 2014). This scale is highly influential in the early childhood field. Recent research has examined how to adapt this scale so that the outdoor environment would be a larger part of the overall score of the scale (Hu et al., 2015), showing the need for a scale with an emphasis on the outdoor environment. While Hu et al. (2015) made adaptations in their study, the study also showed a continued need for an outdoor environment quality scale early childhood providers can self-administer, that is readily available and recognizable to the general early childhood profession.

DeBord, Hestenes, Moore, Cosco and McGinnis (2005) created the *Preschool Outdoor Environment Measurement Scale (POEMS)*. The only one of its kind, this scale explores elements of early childhood outdoor environments, specifically for ages 3-5 years. The scale specifically includes five domains: the outdoor physical environment, outdoor interactions, play/learning settings, program considerations and the teacher/caregiver role. Each of these domains is scored on a percentage of 0-100% present in that space. The scale holds a strong internal consistency, Cronbach's alpha = .87. This scale is intensive and is done by an outside observer. It cannot be self-administered by early childhood professionals evaluating the outdoor environment in their own program.

#### How the Outdoor Environment is Related to Types of Children's Play Unlimited Free Play and Social Exploration

The outdoor environment provides time for free exploration which leads to a climate for social learning (Luchs & Fikus, 2013). Children learn best when engaged in their learning, as their knowledge is shaped from the consequences of personal actions and creations (Gandini, 2012). The outdoor environment can open the world of social playability for children (Kuh et al., 2013; Wells & Evans, 2003). Educators can shape play environment to allow for variety and curiosity, which encourages sociability.

Li, Hestenes, and Wang (2016) found if teachers shape an environment with flexible areas in which children are allowed to manipulate toys and the environment, high frequencies of social pretend play happen opposed to solitary pretend play. In this observational study, the researchers observed 28 preschool children over a three-month

period. Utilizing a time-sampling procedure, the researchers observed preschoolers in their natural outdoor setting. The outdoor settings were enhanced by dramatic play costuming during the observation study. Of the time spent in pretend play, 81% of the children's play was in social pretend play, while only 19% was in solitary pretend play.

Bjørgen (2016), in a qualitative study, observed a group of 24 kindergarten students over 50 observational hours. About half of the observations occurred as the kindergarten class played in their traditional outdoor play setting and the other half as the class traveled to a nature reserve. While Bjørgen's main observation was on the physical play of the children, one of the study's findings was that when children are allowed to play in a natural outdoor environment, play takes on a greater social dimension than in the traditional outdoor play setting.

These types of spaces allow for flexibility where children are allowed to interact, explore, and manipulate materials or space (Blanchet-Cohen & Elliot, 2011; Bjørgen, 2016; Kuh et al., 2013; Li et al., 2016). In each of these studies, traditional and natural outdoor settings were compared, in which either the outdoor settings had been enhanced, or only children's play in the natural setting was investigated. By contrast, in this study all the settings were outdoor spaces in a non-altered form, in the school settings where children attended on a daily basis. The teachers in the current study reported regularly enhancing the environment, but they did not do so during the observations carried out in this study.

### Outdoor Environments and Emotional Development

Exposure to natural environments impacts not only children's social development, but also provides a calming effect that impacts a child's emotional development (Nedovic & Morrissey, 2013; Wells & Evans, 2003). Children's attention spans increased when exposed to natural environments (Mårtensson et al., 2009; Wells & Evans, 2003). Children with longer outdoor stays during the school day had attention span increase throughout the day (Wells & Evans, 2003). Natural materials and space had a calming effect that helped children focus and concentrate on greater detail in the world around them. Specifically, "children's play was calmer, and they were less likely to become agitated or distressed" (Nedovic & Morrissey, 2013, p. 290).

For example, Sahimi (2012) found when 4- and 5-year-old children were given cameras and allowed to take photos of the world from their vantage point, children actually preferred to take pictures of the outdoor environment. Children took pictures of the indoor environment 38% of the time, outdoor environment 42% of the time, and portraits 20% of the time. This difference was even more dramatic when examining the 4-year-old group specifically, which took 65% of their photos outdoors, but only 10% indoors and 25% as portraits. Thus when given the option, children seem to enjoy viewing the multiple perspectives of the outdoor environment at a greater rate than the indoor environment.

In a similar study, children were asked to draw a picture of their ideal outdoor space (Nedovic & Morrissey, 2013). The researchers conducted action research through interviews with classroom teachers and examination of multiple photographs and drawing

of 18 3- and 4-year-old children. Analysis of these drawings showed that the children drew plants at over twice the rate of other aspects of outdoor spaces, including items such as water, soil, animals or insects, and trees or grass. Thirty-six instances included plants, only 16 included water or soil, 14 animals or insects, and 9 trees or grass. Interestingly, fewer than five children included commercial toys in their ideal outdoor space drawings. Sahimi's (2012) and Nedovic and Morrissey's (2013) studies suggest that children naturally prefer outdoor spaces and the natural elements in those spaces.

#### Multi-layered Play and Concentration of Play

Blanchet-Cohen and Elliot (2011) used qualitative observations of children in four child-care settings that were making transitions away from more traditional play areas to more natural outdoor spaces. The excitement and joy in children's play were not found around a slide or climbing structure but in the simple rocks, hills, and bushes the play area naturally provided. Observations revealed how multi-dimensional the play experiences were for children in these natural settings. The trees and bushes became gathering places for friends, a hiding place for games, and a multi-sensory experience for smelling, feeling, and watching the bugs that crawled on them. While children still enthusiastically utilized the traditional swing found in one of the play settings, the swings were often observed as a place for solitary play, although at times there were tendencies to gather around the swings for social interactions.

Fjørtoft's (2004) study focused on physical domains of play with kindergarten children. Even though the focus was on physical play, the results showed children played in a multi-faceted way in the natural elements. When children played in natural settings

multiple dimensions of play emerged at higher levels. Not only was the physical ability of the children enhanced, the natural play happened through a symbolic type of play, rather than just functional play that typically occurs in the traditional play setting.

Being in nature surrounded by natural elements helps children focus on the details of play (Wells & Evans, 2003). Nedovic and Morrissey (2013) found that when children were exposed to natural elements they considered the multiple sensory components and observed these properties. In the rushed life children are often living today, exposure to nature helps children learn to slow down and appreciate beauty and details of materials around them (Rivkin & Schein, 2014).

#### Outdoor Environments and Association with Play Duration and Play Activities

Luchs and Fikus (2013) examined the number of play episodes that 59 5- and 6-year-old German children engaged in within a thirty-minute period, how long those play episodes lasted, and type of play. The play episodes were categorized into play with (i.e., functional repetitious play with child's own body and materials), play as (i.e., role and symbolic play with environment and materials), and play for (i.e., competitive play with rules). On the traditional play space children played an average of 5.57 different episodes during the thirty-minute observations, compared to 3.05 play episodes in the natural space. Natural and traditional play spaces were compared and play-with episodes were almost two times greater on the traditional play areas than on the natural spaces. These results suggest that children might play in a more functional nature on a traditional outdoor play area. These frequency counts show one aspect of the traditional outdoor play area, however. The natural outdoor area promoted longer durations of play as



compared to the traditional area. No play episodes of 15 minutes or longer occurred on the traditional space, while 20% of the play episodes in the natural space were 15 minutes or longer. Moreover, 58% of the episodes on the traditional space lasted five minutes or less compared to 36% on the natural space. Children on traditional play areas were observed spending a lot of time waiting for their play opportunity and moving from one play episode to another.

Morrissey, Scott, and Rahimi (2017) observed two groups of 28 Australian children. The researchers looked at sociodramatic play process on naturalized and traditional playgrounds with 4- and 5-year-old children, observing for a total of 276 minutes over a six-week period. The researchers created their own observation tool with no mention of the reliability of this tool. The study found children's play in natural space was more mobile and involved more imaginative play. Sociodramatic play happened an average of 12 minutes and 50 seconds on natural space compared to 8 minutes and 41 seconds on traditional. The researchers also considered persistence in play with 7 minutes and 30 seconds or less considered low persistence and 7 minutes and 31 seconds or more high persistence. The study showed 276 instances of high persistence in natural space compared to 174 instances in traditional space ( $p < .01$ ).

The playground is a place children get needed physical activity. Herrington and Brussoni (2015) found traditional manufactured playgrounds that do not consider natural elements do not promote optimal physical activity. When natural elements, such as sand, vegetation, and boulders were introduced to a traditionally manufactured playground, the amount and type of movement of children significantly increased. Similarly, Kuh et al.

(2013) found that when natural elements were introduced into a traditional playground setting, children moved and explored in the play environment at a much higher rate.

Another consistent finding in natural versus traditional outdoor play settings is that children play for longer periods of time in more natural settings (Herrington & Brussoni, 2015; Kuh et al., 2013; Luchs & Fikus, 2013). Luchs and Fikus (2013) found that children bounce between many different play activities in traditional play settings. In the natural play area, children played for long durations of time, with 8% playing in the same play activity for the entire thirty-minute observation. In the traditional setting, no child played in one setting for more than fifteen minutes. In a similar fashion Herrington and Brussoni (2015) found that while children did move about the play area more in the setting with natural elements, children would pause and play with one activity for longer periods of time compared to the traditional play setting. Kuh et al. (2013) found in natural outdoor play areas “children’s play activities were more sustained, constructive, and cooperative” (p. 70).

The Kuh et al. (2013) study leads us to consider that children play for shorter durations in a more functional, competitive nature on traditional play areas, while in natural settings children play for longer durations in a less competitive and more creative manner. The results suggest that the type of outdoor settings are associated with both the duration and type of play children engage in, but many questions remain. For example, what specific critical elements in the outdoor setting are associated with the duration and type of play children engage in? This leads to the question of how these elements relate to the children’s social and emotional domains of play in outdoor settings.

### Research Questions

This study focused on types of children's play and on the emotional affect of children during play episodes in traditional and more multi-dimensional outdoor settings. Children's learning comes from child-centered, active play, where the teacher supports the interest of the child (Vygotsky, 1978). Children seek to understand how to make sense and meaning of the world, which begins from early play experiences (Vygotsky, 1933). Some researchers assert a critical piece to this optimal play is the environment where play occurs (Gandini, 2012).

Many early childhood educators understand the need for long periods of engaged free play (Copple & Bredekamp, 2009). Some educators believe well-constructed outdoor environments are an optimal environment for this type of play (Copple & Bredekamp, 2009). Although school policies require minimal standards for daily physical activity, social and emotional domains are not addressed, and they are undercut by a provision privileging instructional time over recess time.

Most studies have compared playground play before and after a transformation from a traditional playground to a natural environment (Czalczyńska-Podolska, 2014; Kuh et al., 2013; Luchs & Fikus, 2013; Mårtensson et al., 2009; Miranda et al., 2016). However the current reality is that many programs are housed in public schools with traditional play spaces (Iowa Department of Education, 2010b, 2016). Because past studies have done comparisons there is not a clear picture of play behaviors of children in their current and unmodified outdoor play space. Furthermore, few if any researchers in the current literature review have taken a deep look at social and emotional play of

preschool children during outdoor play. In this study play behavior, social play and emotional affect of preschool children were observed in their current outdoor play space with no transformation or other intervention. The research questions examined in this study were:

1. What types of play behaviors are observed in traditional and multi-dimensional outdoor play spaces?
2. What types of emotional affect are observed in traditional and multi-dimensional outdoor play spaces?

### CHAPTER 3

#### METHODOLOGY

In this mixed methods study, outdoor settings were explored to discover which types of play and which emotional affects were present during play activities for children. In the analyses children's social and emotional domains of play in outdoor settings were examined. Specifically investigated were the research questions, "What types of play behaviors are observed in traditional and multi-dimensional outdoor play spaces?" and "What types of emotional affect are observed in traditional and multi-dimensional outdoor play spaces?"

#### Participants

The participants were selected from preschool programs housed in public schools and childcare settings in a Midwestern town in the United States, with mixed groups of children ages 4 and 5. Five different sites were selected for observations. Two of these sites were selected from schools meeting the criteria for traditional outdoor spaces and two for multi-dimensional spaces. The fifth site, called the neutral site, was traditional with minimal elements of a multi-dimensional space and was selected to establish inter-rater reliability. In total 20 students were observed, 8 in the traditional setting and 8 in the multi-dimensional setting. The additional 4 observations were done in the neutral site.

The school district where this study took place has 15.2% of PreK-Grade 12 students identifying in one or more minority groups. While the preschools observed were not part of the school system, the children from the preschools feed directly into the

public school system. In the district where observations were conducted, 20.7% of the students receive free and reduced lunch. Specifically the schools in this study ranged from 12.2% at the lowest end to 28% on the highest end. One of the traditional preschool outdoor settings had 18 students and the other had 19 students. One of the multi-dimensional outdoor settings had 16 students and the other 15 students.

Determination of which child would be observed each period was done by counting to the fifth child that entered the play space at the beginning of the outdoor play time. If the researcher could see the class line coming from afar, the participant would be determined by counting to the fifth person in line. If that child had already been observed, the researcher selected the sixth child in line and observed that child in the play area. The field notes form shown in Appendix A was developed to keep track of the children observed. The observation period began as the children initiated their outdoor play time. If children left the play area during the observation the timing was stopped until the child came back to the area and play resumed.

### Measures

Using a time-sampling design the researchers looked at multiple groups of 4- and 5-year-old children in traditional and multi-dimensional outdoor settings, conducting a total of 16 observations, each up to 30 minutes in length. Eight of the observations were done at traditional playgrounds and 8 at multi-dimensional spaces. Four additional observations were done at the neutral site, but those observations were not included in the quantitative data reporting. Those four observations were used to establish inter-rater reliability.

The design of this research project was a mixed methods study with descriptive quantitative components and qualitative observational data (Corbin & Strauss, 2008; Leedy & Ormrod, 2016). Field notes were collected during the observations, with analytic notes recorded after each observation. The observations' spaces were already in existence and no changes were made to the spaces for the purpose of this study.

The researcher used *The Outdoor Play Inventory* developed by Kuh et al. (2013). This inventory covered types of social play, the general type of play, and the specific play object children engaged with at any given time. The inventory was designed for recording individual observations of children over a 30-minute time period. The observer marked the multiple types of play a child engaged in every 30 seconds for 3 consecutive minutes. After 3 minutes the observer recorded specifically social play and dialog of the child for 3 minutes. This pattern repeated for the duration of the play period. If the play period went over 30 minutes, the observation was stopped at the 30-minute mark. If the play period was less than 30 minutes, the observation ended when the children got in line to go back to their classroom. A total of 6.35 hours of observation was conducted during this study in the multi-dimensional and traditional play spaces. The researcher used this inventory to observe children in all settings, recording observations of each child in a systematic manner. A second observer completed a portion of the observations with the primary researcher to establish inter-rater reliability.

There was an additional observational component to *The Outdoor Play Inventory*, which focused on general observations in a narrative form through a set of predetermined questions. These questions were consistently answered after each observation. The

questions provided data that could not be collected in a time interval inventory. Questions pertained to bigger picture considerations, summarizing considerations from children's conversations and energy levels of play, dramatic play themes, and the affect of the observed child during play.

Table 1

*Preschool Outdoor Environment Measurement Scale Domain Characteristics (POEMS)*

Domain	Domain Characteristics
Physical Environment	Examines overall impression of indoor and outdoor physical space, considering how children are connected with natural elements. Looks at drop-off area, windows in the classroom, shade, and overall impression of outdoor area and natural elements.
Interactions	Explores student's social interactions with the teachers and other students. Asks questions about how inquiry-based questioning is used and how teachers facilitate child-centered learning.
Play and Learning Settings	Looks at facilities of outdoor environment, considering manufactured, constructed and natural elements. Investigated shade, manufactured and natural loose parts and beautification of the outdoor space.
Program	Explores specific ways teacher assures curricular areas are considered outside, specifically calling out language, math, science and fine arts. Explores how teacher assures multiple and varied activities are present for physical movement. Asks how teacher connects outdoor and indoor learning opportunities.
Teacher/Caregiver Role	Inquires how the teacher works with families to educate about the value of outdoor play and facilitate outdoor activities with families. Asks how teacher seeks professional development for topics specific to outdoor environments and utilizes outside resource people. Questions safety plan for outdoor environment.



These outdoor spaces were analyzed using the *Preschool Outdoor Environment Measurement Scale (POEMS)* (DeBord et al., 2005). In this scale five domains of the preschool program were measured as shown in Table 1. The domains specific to interactions, play and learning settings, and program were considered for this study.

For the purpose of this study, the traditional outdoor space was defined as an area with large playground equipment and artificial surfacing under that equipment. The space contained no or minimal natural elements to which children had direct exposure (e.g., grass, trees, plants, rocks, and manipulative objects). The traditional space's score in the program domain from the *POEMS* was lower, as the program did not include how curricular areas could be addressed in the outdoor environment. Additionally, the play and learning domain scores were lower as the facilities might only utilize manufactured playground equipment, not introducing loose parts or assuring natural elements were included in the outdoor space. The interaction domains were scored lower, as the environment was not set up to promote peer social interactions.

A multi-dimensional space may have contained playground equipment, but also elements such as grass, trees, plants, rocks, sand, and objects that children can manipulate and create with. The objects may have been manufactured loose parts such as blocks, sand or water toys, balls, chalk, or manipulatives. The objects might have been natural such as sticks, pine cones, dirt, leaves, shells, or mulch (DeBord et al., 2005). The multi-dimensional space's score in the program domain from the *POEMS* was higher, as the program included how curricular areas could be addressed in the outdoor environment. Additionally, the play and learning domain scores were higher as the facilities utilized

manufactured playground equipment in addition to introducing loose parts and assuring natural elements were included in the outdoor space. The interaction domain scores were higher, as the environment was set up to promote peer social interactions.

### Procedures

The first step in the implementation of this study was obtaining permissions from the authors of *The Outdoor Play Inventory*, as it is not a tool available for purchase. This was done through an email conversation with the primary author of the inventory. Once permissions were obtained, the document was formatted for use in the field and one copy was made for each observation. The researcher purchased a copy of the *POEMS* to use for research purposes. The study was approved by the University of Northern Iowa's Institutional Review Board (IRB).

The administrators from each of the five preschool sites were contacted and asked if the program would participate in this study. For the sites housed in non-public school settings, the researcher directly contacted the director of each site. For the sites housed in public school settings, initially district level administration was contacted and the researcher was given permission to contact building level principals. The principals gave the researcher names of teachers willing to participate in the study and the researcher contacted each of those teachers.

Once permissions were obtained at an initial level, the researcher set up a time to conduct the *POEMS* (Appendix B) analysis for each site to confirm the initial consideration of the outdoor space was accurate. Analysis of *POEMS* required an onsite observation as well as a teacher interview component. The teacher interview was

conducted to clarify points not observable during the onsite observation period. The teacher interview consists of a structured set of questions. The researcher asked the classroom teacher or center director each question and responses to interview questions were transcribed during the interview. Because the questions were pre-determined and short, the interviews were not recorded, as the researcher was able to easily write the responses during the interviews. Once the interviews were concluded the researcher tabulated the results of the *POEMS* for each site. As initially anticipated, the sites selected as traditional fell into lower ranges of the *POEMS* scores and sites selected as multi-dimensional fell into higher ranges of the *POEMS* scores. Because of these results the researcher was able to continue with the originally selected sites for the duration of the observations.

Once administration of *POEMS* was concluded at each site the researcher arranged times to conduct the four *Outdoor Play Inventory* (Appendix C) observations at each site. Research data was collected through direct observation. Because of the nature of the research, a general informational letter was sent to the families of all children in the study informing them of the study. No names were recorded for the analysis of the data. Each observation sheet was assigned a code so the researcher could keep the observation sheets organized by program. The researcher noted the general characteristics of each child observed to assure the child was not observed more than one time. The researcher observed four different children in each of the four different preschool programs meeting the *POEMS* criteria, for a total of 16 observations. Four observations were conducted at the fifth neutral site to help establish inter-rater

reliability, but not used for data analysis. The four observations from the neutral site were not used in the quantitative data analysis.

Due to the outdoor nature of this research and location, weather was a factor influencing the observation times. According to the Iowa Department Public Health and Healthy Child Care Iowa (2017), child care regulations state when the temperature is 39 degrees Fahrenheit or below, or 84 degrees Fahrenheit and above, caution should be used and the amount of time children are allowed to go outside should be shortened from a regular play period. Both extremes happened over the course of this study. If the researcher was not able to observe on one day due to weather conditions, observations were resumed on the next available day of the program as weather permitted.

The researcher observed one child per day. The researcher selected the fifth child that came into the play area. If that child had already been observed, the researcher observed the sixth child that came into the play area. The field notes form shown in Appendix A was employed to keep track of the children observed. For each observation, an inventory was conducted with follow-up of the written questions. These questions were answered as quickly as the observer could after the observation, always prior to the next observation. The observations were conducted over a 3-month time period from March through May.

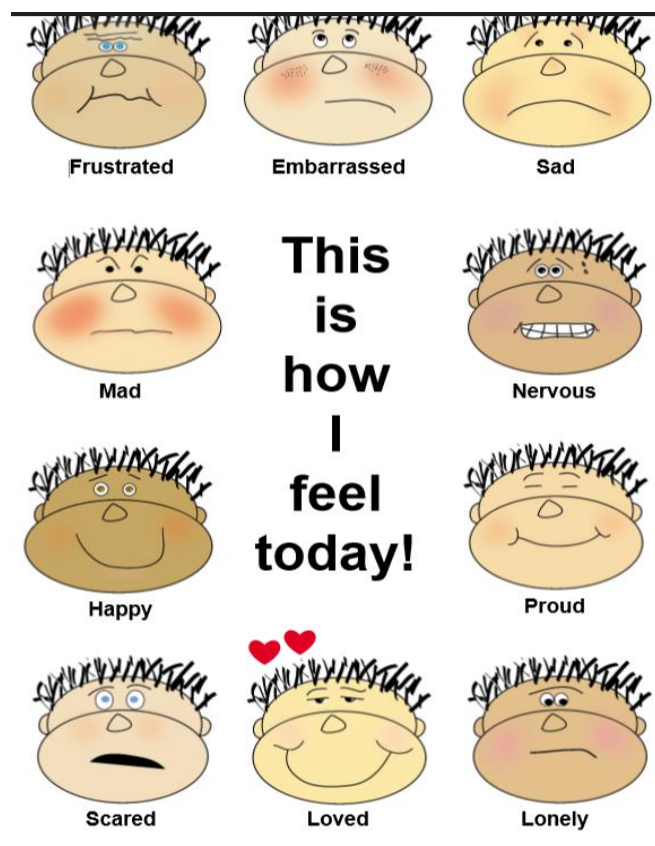
#### Social Play and Emotional Affect

Assessment of children's engagement in play was based on the general social play and emotional affect of children. The *Outdoor Play Inventory* was used to examine this engagement. The observer did a longer observation every three minutes for a period of

three minutes total. During that time the observer looked more specifically at the affective and social interactions of the child being observed. As shown in Figure 1, The Center for Social and Emotional Foundations for Young Children (2018) (<http://csefel.vanderbilt.edu/resources/strategies.html>) feeling chart was used to establish consistent marking of participants' emotional states during the observations. Each of the feelings was numbered one through ten so the observers could quickly mark the affect by number. If the observers could not mark one of the ten affects to describe the child, a narrative explanation was recorded.

Figure 1

*Feelings Chart Utilized for Observations*



Additionally, children's engagement in play was focused on the active play children engaged in during the play episodes. When the children were engaged in higher levels of play their movement was fluid and constant, involving sitting, standing, running, squatting, and other fluctuating movements all within the 30-second intervals. There was not a specific category for this type of movement on the checklist, and this movement was only seen on the multi-dimensional sites.

#### Inter-Rater Reliability

The primary researcher and a second observer established inter-rater reliability with *The Outdoor Playground Inventory*. This observer was trained by the primary researcher to use *The Outdoor Playground Inventory*. The second observer was another doctoral student in the Curriculum and Instruction program. Her background is teaching early childhood education and she currently teaches pre-service early childhood and elementary teachers. She has experience observing young children in various play settings.

The primary and second observers went through a training period prior to conducting the first live observations. During this training both observers independently familiarized themselves with the terminology in the observation tool, with pre-determined definitions the primary observer obtained for types of play behavior from Parten (1932) and Smilansky (1968). While many of the additional descriptors on the tool were common vocabulary for both observers, some definitions were unclear to one or both observers. Any of the uncertain terms were reviewed and definition consensus was determined. Those uncertain terms are summarized in Table 2.

Table 2

*Established Common Vocabulary for Inter-Rater Reliability*

Vocabulary Term	Established Definition
Rough and Tumble Play	“Include chasing, tackling, play fighting, “football” like behavior, and reciprocal role taking” (Reed, 2000, p. 45), where children are generally enjoying reciprocal behaviors.
Jumping	“Propel body from a surface with one or both feet.” (Haywood & Getchell, 2009, p. 22)
Skipping	“Step and a hop on the same foot, with alternating feet.” (Haywood & Getchell, 2009, p. 136)

Once vocabulary was consistent the observers watched video clips of children playing in outdoor environments and practiced using *The Outdoor Playground Inventory*. The primary observer arranged for the neutral outdoor play area to be used to practice and establish acceptable reliability. The first time observing, the raters stood together for the observation and scored the same child and compared notes as they scored. After this practice session the observers then scored 3 additional practice sessions independent from one another, but always scoring the same child. Scores from these observations were calculated and compared and continued over several practice observations. The formula  $\frac{\text{agreement}}{\text{agreement} + \text{disagreement}}$  established a reliability percentage. The observations continued until an average inter-rater reliability of 91% was established.

After an acceptable inter-rater reliability rate was established on the neutral site, the second observer continued scoring with the primary observer on two multi-dimensional play sites and two traditional play sites. Scoring these sites allowed for 35%

of the total number of observations to be scored with a second rater. The average inter-rater reliability scores on these sites was 90.25%. The scores were higher on the traditional sites (94%) compared to the multi-dimensional site (86.5%). This discrepancy was attributed to the play experiences being more active on the multi-dimensional sites.

#### Data Trustworthiness and Credibility

Beyond establishing a high inter-rater reliability score in both types of outdoor settings, additional measures were taken to assure trustworthiness of the data and credibility. Multiple sources of data collection were gathered. The first form of data collection was the 30 second pre-coded indicators on *The Outdoor Play Inventory*. Second, both observers took field notes during the 3 observation minute periods of *The Outdoor Play Inventory*. Third, the primary observer recorded analytic notes after each observation period. These multiple data collection points were all considered as data was analyzed.

#### Data Analysis

The large amount of data collected from this study required organized notes for the analysis of the data. Of the 20 children total only 16 observations were analyzed for reporting. The first 4 observations were used to establish inter-rater reliability. For entry into Excel, the observer coded each category from the observation tool into a code sheet to use for ease of entry.

Individual data was first compiled. Each of the 50 indicators from *The Outdoor Play Inventory* were individually entered into Excel for each participant. The data entry was done over a series of different input sessions to reduce input error. Once observations



were complete and all the data was entered, the data was analyzed. Some of this information was then used for group analysis of how often the group was observed engaging in a specific behavior, and other information was pulled out based on individual participant observations. Any group was composed of all individuals across both sites in a play area type. The data was organized into descriptive statistics, namely, percent of observation time for each variable observed. The Parten and Smilansky play types and gross motor information were specifically analyzed. Additional analysis was done on the emotional affect data. These areas were decided on because their analysis held the most contrast in data and based on qualitative observations that paired with those specific findings.

Hand in hand with the quantitative analysis was daily analysis from the qualitative notes after each observation. NVivo software supported the qualitative analysis portion of the data analysis. These notes shaped the specific quantitative data the researcher analyzed.

A constant comparative method of analysis began early on during observation on the neutral site. Corbin and Strauss (2008) define the constant comparative method as, “an iterative process in which the researcher moves back and forth between data collection and data analysis” (p. 252). Shortly after each observation, typically within eight hours and always prior to the next observation, the researcher reviewed the written field notes and began to look for specific patterns and themes that emerged from the observations. Information collected from the field notes and quantitative patterns influenced data collection as the observation periods evolved, specifically around the

emotional affect observations. The primary researcher and second observer quickly realized the need for a consistent way to collect specific notation about the emotional affect of the children. The primary researcher decided to use The Center for Social and Emotional Foundations for Young Children Feeling Chart (2018) (<http://csefel.vanderbilt.edu/resources/strategies.html>) to consistently mark the affect observations. The original marks matched numbers one through ten with each of the emotion faces pictured on the chart. Each observer could quickly mark the observed emotion with one number. As the observations evolved both researchers identified periods of time there was not an appropriate emotional descriptor for certain children. After analysis of observer notes, the primary researcher evoked an eleventh category of no affect. This category was shared with the second observer and consistently marked from that period forward.

Numerous factors impacted the observations. Extremes in weather and day-to-day happenings in preschool classrooms caused play period times to vary. To account for these variations in time, descriptive statistics, based on percentage of time rather than instances, were determined to be more appropriate for reporting findings. The observer took the total number of 30-second play instances and divided that number by the total number of minutes for that observation. This percentage was used in the descriptive reporting. A total of 193 30-second observations were conducted in the traditional spaces and 210 in the multi-dimensional spaces.

## CHAPTER 4

## RESULTS

Early Childhood Outdoor Environments

Application of the *Preschool Outdoor Environment Measurement Scale (POEMS)* (DeBord et al., 2005) was used as a screener to determine to what extent the preschool outdoor play spaces were traditional or multi-dimensional. The researcher conducted an observation to complete the *POEMS* at each of the five sites. In addition, the researcher conducted an interview at each site to address the additional questions in *POEMS*. The researcher tallied the results from the observations and interviews. There are five domains total, and each domain is scored on a percentage present, 0-100%, in that space. Results from the *POEMS* are shown in Table 3.

Table 3

*Results of Preschool Outdoor Environment Measurement Scale (POEMS): Items Observed by Domain as a Percentage of Total Items Possible in the Domain*

Site	Domain 1 Physical Environment	Domain 2 Interactions	Domain 3 Play and Learning Settings	Domain 4 Program	Domain 5 Teacher/ Caregiver Role
Neutral Site	53	69	53	55	75
Traditional 1	46	53	15	22	63
Traditional 2	23	15	30	11	38
Multi-dimensional 1	62	92	100	78	100
Multi-dimensional 2	92	100	100	100	100

The *POEMS* scores for the sites originally anticipated as traditional and multi-dimensional were calculated. Observations at multiple sites to find suitable traditional

and multi-dimensional spaces were not necessary. The neutral site was a test site to establish inter-rater reliability. Had the neutral site been originally considered either traditional or multi-dimensional another site would have been selected, as the scores of that site were not differentiated enough in either direction to establish a strong case for a definition of neutral or multi-dimensional. The data gathered from the children at this site was not used in the quantitative portion of the data analysis.

One of the original considerations for traditional versus multi-dimensional was a fence surrounding the outdoor play area. This was removed from the definition, as four of the sites were fenced and one was not. The site not fenced was one of the traditional sites. At this site on four of the five observation days the children were not allowed to leave the surfaced area of the outdoor space. The day the children were allowed to leave the surfaced area was a day with considerable children were allowed to play anywhere in the outdoor space. The presence of a fence as a stand-alone element did not impact the scores of *POEMS* in a way that changed the definition of traditional versus multi-dimensional.

An additional consideration for the original definition of traditional versus multi-dimensional was an area that only contained manufactured surfacing. One of the traditional sites had both manufactured surfacing and a large grassy area where children were allowed to play. While the addition of the large grassy area helped raise the scores of the play and learning settings domain a small amount for that traditional area, the absence of other elements did not drastically skew the score in that category. Conversely, the second traditional site did have a large grassy area, but the children were not allowed

access to the grass during these observations. The presence of a large grassy area as a stand-alone element did not impact the scores of *POEMS* in a way that changed the definition of traditional versus multi-dimensional.

While the presence of grass did not impact the direct score of *POEMS*, one particular observation shed light on how grassy areas impact children's play. One of the sites had its grassy area closed for a short time to help the grass reestablish itself after a harsh winter. The observer conducted an observation the day the grassy area was reopened. Below are the field notes from that day:

This was definitely another "you'll know it when you see it" type of day. The grass space was reopened after being closed to allow for regrowth. The play was simply different when the children had a large space to be part of. It wasn't that the play was bad prior to this, but the play episodes were richer today. An interesting note, while the children had used the large piece of grounded play equipment often prior to the opening of the grassy space, only one child went on this equipment for the entire 24-minute duration today.

When examining the interaction domain the average score on the traditional sites was 34% compared to 96% on the multi-dimensional sites, meaning in the multi-dimensional site there were greater opportunities for children to interact socially with teachers and other children. One of the primary themes in this domain was how teachers plan for child-centered learning during the outdoor time. When the teachers were asked to respond to the question, "How do you build on children's interest outdoors?" all the teachers indicated they did attempt to build on children's interest outdoors. Because this was true, the teachers were not always able to execute child-centered play to the extent they hoped due to school policy constraints and restrictions. For example, at both traditional sites elementary students grew and kept outdoor gardens. The preschool

programs were not allowed access to these garden spaces, having to grow small gardens indoors. These obstacles deterred the teachers' ability to follow through on full implementation of creating child-centered learning environments.

Another constraint was the ability to store play materials in the outdoor space in the traditional settings. The teachers hoped to have loose parts and play materials such as buckets, shovels, and trucks, but did not have secure outside storage to keep those types of materials. Due to the walking distance to the outdoor space, carrying extra materials outside was prohibitive. Additionally the traditional-space programs were only allowed to have access to their outdoor space for a set, limited amount of time, due to other classes coming in and out of the space. It was more challenging for teachers in the traditional spaces to freely take their children to spontaneously play outside.

In the interactions domain both of the multi-dimensional sites had specific environmental considerations to encourage child-to-child interactions, such as child-sized picnic tables, benches, talking tubes, and cozy areas for sitting. While one of the traditional sites had child-sized picnic tables, they were not used as social areas, but more often as platforms for jumping from.

When looking at the play and learning settings, the traditional settings scored an average of 22.5% while the multi-dimensional scored 100%, meaning in the multi-dimensional site there was a large variety of play and learning opportunities for children. The range of possibility was 0-100%. The multi-dimensional spaces had a variety of both manufactured or constructed, and natural elements in their outdoor spaces, including anchored manufactured or constructed equipment in addition to manufactured or

constructed equipment for climbing, balancing, crawling and stepping, play houses and stages, and acoustic areas. Additional natural elements included sand and water areas, grassy areas, flower and plant gardens, trees, animal habitats, and cozy natural areas. The traditional spaces both contained one large anchored piece of manufactured playground equipment, with one also having children's picnic tables.

All of the spaces had multi-purpose, large grassy areas available for use. Both of the multi-dimensional spaces had adequate storage outside and a large variety of manufactured and natural loose parts such as blocks, manipulatives, sand and water toys, balls, sticks, rocks, pine cones, and dirt. One of the traditional spaces had just installed an outdoor storage shed, but the teachers were not able to find the key to the lock on two of the observation days. One of the traditional spaces allowed their children to bring out only three to four items, such as two trucks or two hula-hoops, for the entire group of 18-20 children in the classroom to share. The other traditional space brought sidewalk chalk outside.

When looking at the programming, the traditional settings scored an average of 16.5% while the multi-dimensional scored an average of 89%, meaning in the multi-dimensional site teachers planned for a wide variety of curricular components as well as connected indoor and outdoor learning opportunities. The multi-dimensional sites had specific areas for art, drama and music, including props to support dramatic play and a stage area, in addition to props to support movement and dance. Three of the four sites consistently had sidewalk chalk available for the children. The multi-dimensional sites had materials for children to classify and sort with natural objects. Both of these spaces

had bird and squirrel feeders. These spaces had reading areas where books could be easily brought out from storage facilities. No provisions for drama, music, math, science or language activities were made available in the traditional spaces.

One of the traditional spaces had swings and the other had anchored spring rockers to allow for vestibular stimulation. While both of the traditional spaces had well maintained, manufactured equipment the physical activity and movement opportunities were limited to climbing, sliding and jumping on or off this equipment. No additional opportunities for crawling through, throwing, skipping or hopping were present.

The traditional spaces each had two 20-minute blocks for outdoor time in their 5-hour day or 13% of their day devoted to outdoor time. One of the multi-dimensional spaces had three planned 30-minute blocks, with additional time depending on the activities of the day. The other multi-dimensional space spent a large block of morning and large block of afternoon time outside depending on the activities of the day. Both of the multi-dimensional spaces operated a 9- to 10-hour day. This constitutes 17% of a 9-hour day or 15% of a 10-hour day devoted to outdoor time. These percentages fall within less than a 5% difference between the traditional and multi-dimensional spaces.

Children playing in the multi-dimensional spaces were not allowed to take materials outside a designated area in one of the sites. This site had specific areas such as the music center, science center, and garden center. Children were not allowed to take materials from one place in the play area to another. The other multi-dimensional site allowed children to move objects as they wanted around the space. Children would carry



water from the water center clear across to a mud kitchen to create richer play opportunities.

### Types of Play and Young Children

#### Play Instances in Multi-dimensional and Traditional Play Spaces

As shown in Table 4, there were differences in some types of play between the multi-dimensional and traditional play spaces, based on the total number of 30-second play intervals observed. Tables 5 and 6 show further break down of 30-second play intervals for each child observed in this study. Based on Parten's (1932) levels of play, a higher percentage of solitary play happened on the traditional play spaces. The percentage of play intervals for associative play instances observed was the same across both types of play area (30%). For cooperative play, 46% of the 30-second play instances were in this category on the multi-dimensional, higher than the traditional spaces. For onlooker play, 37% of the 30-second play instances were observed in this category on the traditional setting and 3% on the multi-dimensional. The differences in unoccupied and parallel play were minimal and attributed to the age level of children observed.

Analysis of Smilansky's (1968) levels of play revealed differences in some categories. Functional play instances were observed at a higher rate on the traditional space. Constructive play was observed on the multi-dimensional spaces 50% and 8% on the traditional sites. Small amounts of dramatic play was seen on both spaces, moreso on the traditional space. No instances of standard games with rule play were noted on the traditional play space, with 7% of the 30-second play intervals recorded this type of play

in the multi-dimensional space. No instances of invented games with rules were seen in the multi-dimensional space observations, with 17% of the 30-second play intervals recorded this type of play in the traditional spaces.

Table 4

*Percentages of Play Categories Observed during 30-second Intervals*

	<u>Multi- dimensional</u>	<u>Traditional</u>
	n = 210* %	n = 193* %
Unoccupied	0	0
Solitary	15	48
Onlooker	3	37
Parallel	7	1
Associative	30	30
Cooperative	46	16
Functional	24	75
Constructive	50	8
Dramatic	13	1
Standard Games w/ Rules	7	0
Invented Games w/ Rules	0	17

\* n = total number of 30-second play intervals observed

Looking at observation percentages across individual participants shows further detail for differing types of play. Table 5 reports individual participant information for each of the Parten (1932) and Smilansky (1968) types of play. All participants on the traditional spaces spent some amount of time solitary play, ranging from 7-17% of play intervals, with four of the participants spending 10% or more in solitary play. On the multi-dimensional spaces two participants showed no solitary play, with the others ranging from 2-12% of intervals in solitary play. In the traditional space, five of the participants showed no cooperative play, with the other three ranging from 4-18% of the 30-second play intervals in cooperative play. On the multi-dimensional spaces three participants showed no cooperative play, with the other five ranging from 10-28% of their play instances recorded in cooperative play.

Table 5

*Percentages of Parten Play Categories for Individual Children during 30-second Interval*

*Observations*

	Solitary	Onlooker	Parallel	Associative	Cooperative
MD1	5	0	0	0	28
MD2	12	0	13	5	0
MD3	5	0	0	0	25
MD4	2	0	0	3	25
MD5	9	0	0	15	0
MD6	0	0	0	18	0
MD7	3	5	0	6	10
MD8	0	1	0	7	16
T1	9	0	1	10	0
T2	8	0	0	15	0
T3	16	0	0	8	0
T4	7	0	0	7	4
T5	12	0	0	0	18
T6	17	0	0	7	0
T7	13	7	0	4	0
T8	11	0	0	3	14

Individual children's percentages of 30-second observation intervals for Smilansky's (1968) levels of play are seen in Table 6. Functional play instances were observed in individual children 12-27% of the 30-second play instances on the traditional space and 0-15% in the multi-dimensional space. Constructive play was observed on the multi-dimensional spaces 7-24% of play instances across seven children. On the traditional sites one child participated in constructive play. Dramatic play was seen in the multi-dimensional play spaces in four children, with one child participating in dramatic play in the traditional space. No instances of standard games with rule play were noted on the traditional play space, with one child participating in 17% of the 30-second play intervals in the multi-dimensional space. No instances of invented games with rules were seen in the multi-dimensional space observations, with four children participating in this type of play in the traditional spaces.

Table 6

*Percentages of Smilansky Play Categories for Individual Children during 30-Second*

*Interval Observations*

	Functional	Constructive	Dramatic	Standard Game w/ Rules	Invented Game w/ Rules
MD1	5	18	7	0	0
MD2	3	24	3	0	0
MD3	6	0	20	0	0
MD4	5	9	0	17	0
MD5	14	10	0	0	0
MD6	0	12	1	0	0
MD7	15	7	0	0	0
MD8	1	22	0	0	0
T1	20	0	0	0	0
T2	19	0	0	0	5
T3	24	0	0	0	0
T4	14	0	0	0	4
T5	12	18	0	0	0
T6	13	0	0	0	11
T7	13	0	0	0	11
T8	27	0	2	0	0

### Narrative Observations of Play

Children playing on the swings played in more functional type play. On the tire swing where children participated in groups, the play was solitary or parallel almost exclusively. When tire swings were present children gravitated toward this type of swing, but social interactions were limited. There were limited numbers of tire swings, and children had wait periods on some play spaces as they waited their turn for the tire swing. While no functional play counts were used for the descriptive portion of this study from the neutral site, one field note from that site showed how additional play materials on a play area can enhance social play. One observation on the neutral site showed distraction from the tire swing and shorter line at the swings than observed on previous observation days when a program brought sleds outside for the children to play on. On this day the lines at the tire swing were shorter, as the children had more play options from which to choose, limiting the amount of wait time children had in this play period. The amount of cooperative play was higher, given that the nature of sled play was the cooperative action of pushing or pulling friends on the sleds.

Cooperative play took on different levels of social implications on the multi-dimensional and traditional play spaces. Two distinct cooperative play episodes were noted. The first happened on a traditional play area as a group of girls participated in their made-up “lipstick club.” At one point 7 of the 12 girls playing outside during this play period were in the club. Little girls were included or excluded from the club based on a type of dance they performed. If the leader of the club did not approve of the dance, she would say, “Out with you” and dismiss the girl from the club. One girl was asked to

join, but said no because she did not like lipstick. The leader of the club told this little girl, “I will tell you what to do.” When the girl did not agree with the leader, she was not allowed into the club. There was no teacher intervention in any of the conversation or actions, as the girls were not outwardly doing anything directly harmful that could be observed from a distance. The only way to understand what was happening was directly observing and listening to the conversations.

A similar club-like instance was observed during an observation at a multi-dimensional play space. During this instance a boy wanted to join a girls-only club. While he was initially rejected from the club he was later accepted, as he found a maple seed from a tree and brought it back to the club leader. She immediately forgot her original objection to the boy being part of the club and allowed him to play with her and her other friend.

#### Social Play and Emotional Affect

In this study the emotions were examined that children were likely experiencing during their daily play times by recording the affect of children during outdoor play in addition to analysis of the observer’s narrative observations. In this study purposeful play episodes were examined as well as how social affect and emotional play differed in multi-dimensional and traditional play spaces.

#### Affect During Play on Multi-dimensional and Traditional Play Spaces

During the observations the observers halted the 30-second increment checks and completed a longer 3-minute observation period. During that time the observers looked more specifically at the affective and social interactions of the child being observed.

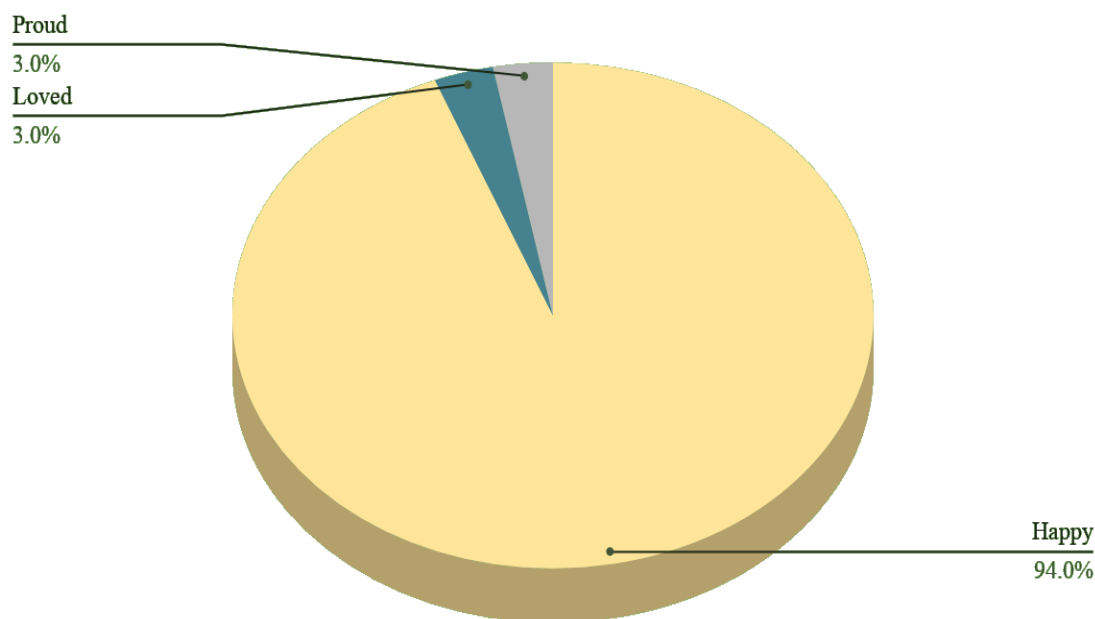


Emotions icons were numbered one through ten so the observers could quickly mark the child's observed affect by number. If the observers could not mark one of the ten affects to describe the child, a narrative explanation was recorded. Early analysis of those narrative explanations produced an eleventh category of no affect. This category was marked if the observers could not establish a notable affect for the child. The child was not necessarily happy or sad, rather seemed to have a blank facial expression with no emotional output.

There was a distinct difference in affect during play experience in the multi-dimensional space compared to traditional space. Affect of the children on the multi-dimensional space (Figure 2) was coded as positive emotions, including happy (94%), proud (3%), and loved (3%).

Figure 2

*Affect During Children's Play on Multi-dimensional Play Areas*



The emotion proud was captured specifically in the field notes after an observation on one of the multi-dimensional sites:

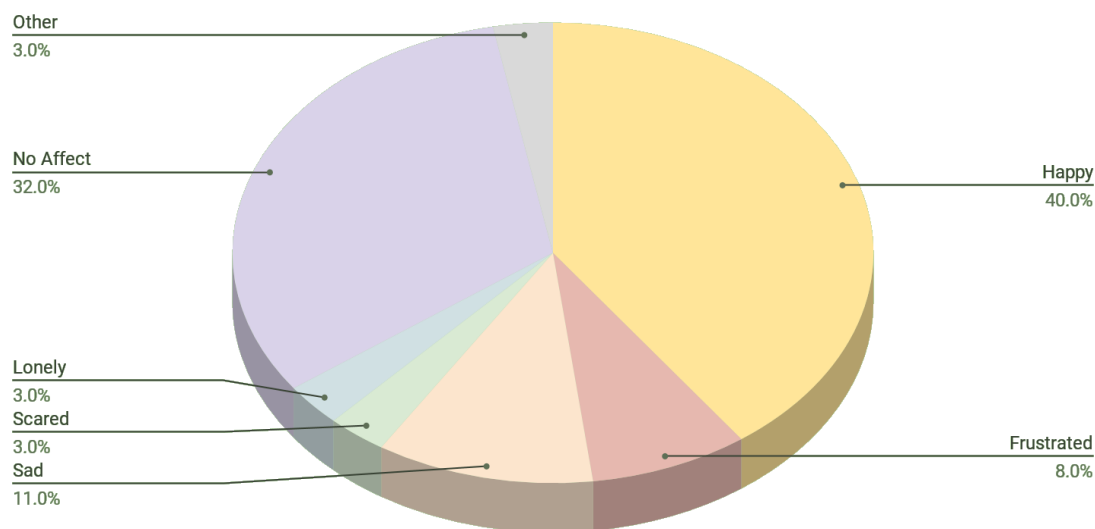
The little one I observed got to ride with her bike helmet today – it looked like what was for a first time. She was timid about it, but very proud of her accomplishment of getting the trike to go.

Forty-two percent of the children on the traditional spaces (Figure 3) were observed as happy or other (3%). The other emotions observed were frustrated (10%), sad (8%), scared (3%), or lonely (3%). Analysis of the observer's narrative notes and data points showed the category of no affect (31%) on the traditional spaces. This category was not coded on the multi-dimensional spaces. Children observed in this

category could not be categorized in any of the affect rankings. These children were observed with no affect and with expressions on their faces. This play was different than unoccupied play as in these observation instances children might be walking around or even running, but have no affect in what they were doing. A 4-year-old sitting and doing nothing would be coded as unoccupied. For the coding of these instances the child might be in a parallel or functional state of play with no affect.

Figure 3

*Affect During Children's Play on Traditional Play Areas*



Associative play happened consistently in both the traditional and multi-dimensional sites, but affect during the associative play varied. The child affect on one traditional site was captured in a field note showing specific observation of the type of emotions captured in Figure 4:

The site had a good deal of associative play, but was not cooperative. There seemed to be a good deal of frustration and a bit of sadness from the girl I was observing today. She was not appreciative of how the boys were playing with her at times. She also seemed to watch a lot as the other children played the puppy penguin game. She did finally join in after some time.

Another field note brought a similar picture of play to light:

While there were periods of time this boy was happy and times he was sad, a good deal of the observation the observers recorded neutral affect, with no visible emotion. I can't call it content, but almost call it lost. He went in and out of solitary and associative play. Most of time was spent in a game of running without a real goal. No one was being caught or captured. There didn't seem a goal, just running simultaneously. It was more than parallel, as there was a definite purpose and children playing in tandem, but no goal.

#### Narrative Observations of Play Affect

The observer noted several distinct episodes of play engagement in the field notes, some with positive outcome and some raising questions and concern. This study was constructed to observe one child per day, but the observer did take specific field notes after each observation. The field notes were typically related to other children the observed child was playing with for the day and in some instances were deeper detail of the specific child observed. Early in the study an associate was excited for the children to play in the snow on a traditional play area, stating, "At least they will have something to do today." This quote struck the primary observer.

One of the most notable trends from the field notes was the increased engagement in play that happened when elements were introduced not typical to the play environment. On the first day of observation on one of the traditional spaces a good deal of snow had fallen the night before and the children were allowed to play in the snow.

That day the children were engaged in snow play. The following are the observer's field notes from the observation the next day, when most of the snow had melted:

Today made the associates quote from yesterday come full circle. The children had a much harder time engaging in play today than yesterday. The play that was witnessed seemed to be in short stints and in a functional manner. There was very little dramatic play happening, and when it did it was for short stints of time. More or less the children were not as engaged in play today as yesterday. The little one I observed really seemed to wander a lot. While she was not sad, she also could not be considered in a happy affect.

During another observation on a traditional play area, the children were allowed to play in the dirt in the play area. This was the only day during the course of the study that children were allowed to play in the dirt. The child being observed this day dug in the dirt with a wood chip found under the play equipment for eighteen of the thirty, 30-second time intervals observed. The other twelve, 30-second intervals were spent walking to and from the classroom to the outdoor play area. In other words, the child spent the entire duration of the play period digging in the dirt with a wood chip used for surfacing under the playground equipment. Her objective evolved over the duration of the play period, by the end specifically looking for and observing worms and bugs found during the digging episodes. The following are the field notes after that observation:

The observation I had today had tremendous associative play value, all on the grass and with no toys. I wonder what the play would have been like if there were toys? By the end of the observation 2/3 of the children (12 out of 18) were digging for worms. Amazing the play attraction of this simple activity! The amount of time they were engaged was something I have not seen to date. Awesome. Didn't see her on the equipment any time.

During one observation on a multi-dimensional play space a Frisbee was brought out for the group to play with. The child I was observing that day spent 24 minutes of the

30-minute observation playing with the Frisbee in different capacities. While other children came in and out of his play, he sustained the play with the toy. Field notes from that day noted the high engagement in play:

There was an extraordinarily high level of play engagement and social interaction today. This was the longest sustained game I have seen to date – mainly because there was a Frisbee and open space to throw the Frisbee. The “active play” came up again today, although this little one was very vigorous with long periods of vigorous play.

### Active Play

Through the observation on the multi-dimensional spaces an active play category emerged. This type of play could not be captured on the original observation tool. When children were engaged in higher levels of play their movement was fluid and constant, involving sitting, standing, running, squatting, and other fluctuating movements all within the 30-second intervals. This led to adding a category called active play. Active play was observed during 5 of the 8 observations periods on the multi-dimensional play spaces and not observed on the traditional spaces. Detail of this play is shown in Table 7.

Table 7

*Individual Children Percentage of 30-Second Observations of Differing Play Instances of Gross Motor Skills*

	Active
MD1	73
MD2	40
MD3	0
MD4	7
MD5	0
MD6	33
MD7	25
MD8	0
T1	0
T2	0
T3	0
T4	0
T5	0
T6	0
T7	0
T8	0

The active play movement was marked when the observers noticed the child in a pure state of play, moving fluidly through standing, sitting, bending, jumping, running, but nothing for more than 2-3 seconds at one or more 30-second observation time. This was captured many times during the observations through field notes such as the following:

This little one had some of the “active play” today I noticed prior, she was actively moving while playing with the instruments, with no one specific movement for any period of time. The musical instruments were engaging and she was excited to play with them.

This notation came in other observation periods, such as the field notes below capturing a dramatic play episode on one of the sites:

This child had similar “play” behavior as my last observation. She was in a constant play type of movement, standing, running, walking, sitting as she needed to live out her dramatic play theme.

This type of action was opposite of what was seen in several instance on the traditional sites, such as the note captured below:

Something that came to me was the notion of sitting and/or standing. This tool does not capture what it truly needs. In my thoughts sitting and/or standing can have an active and passive type action. In my observations I have observed sitting where children they are truly passive. Sitting on a tire swing, sitting watching others or sitting doing nothing. I have observed passive standing, standing and waiting for play opportunity or standing and doing nothing.

As seen in Table 8, active play was absent on the traditional sites, but observed 22% of the 30-second play intervals in the multi-dimensional spaces. Other gross motor observation descriptors are shown in Table 8.



Table 8

*Percentage of 30-Second Observations of Various Gross Motor Skills*

	<u>Multi-dimensional</u>	<u>Traditional</u>
	<u>%</u>	<u>%</u>
Run	7	12
Sit	36	14
Stand	50	10
Walk	25	33
Active	22	0

## CHAPTER 5

### DISCUSSION

This study examined the type of play, social play and emotional affect that pre-school children exhibited in traditional and multi-dimensional outdoor play environments. General emotional affect of children during play and types of play movement were observed, recorded and analyzed. The outdoor spaces were not experimentally altered and children were observed naturalistically in the outdoor play spaces provided to them.

During the course of this study the defining characteristics of traditional and multi-dimensional were established to determine the four sites utilized for observation. A fifth site was used as a neutral site to establish inter-rater reliability, but observation from those participants was not include in descriptive analysis. Detail of findings showed analysis of Parten (1932) and Smilansky (1968) levels of play, emotional affect, and percentage of time participants spent in specific gross motor areas of play.

The results of this study indicate that in the multi-dimensional spaces children engaged in more positive play, assessed in both social and emotional domains of development, relative to play in the traditional spaces. Additionally, children engaged in more constructive play behavior in the multi-dimensional spaces, with more functional play occurring in traditional spaces.

#### Environment and Young Children

While the vast majority of early childhood programs create outdoor spaces (Wellhousen, 2002), the construction of outdoor environments varies. In this study the

four outdoor play environments had wide variance in the construction of the physical environment. Even greater difference was how teachers set up the outdoor environment to afford different play opportunities. Educators might explore how to bring to life, expand and build on educational schemas in early childhood (Egan, 1985).

*The Preschool Outdoor Environment Measurement Scale (POEMS)* (DeBord et al., 2005) was used to evaluate the five sites on the quality variable in their outdoor environments. While two of the spaces came out higher in all categories of *POEMS*, the other three outdoor environments all had elements of what this environmental scale rates as quality indicators. Observational measures have limitations and cannot capture the full essence of child experiences. Even on the highest scoring play area, teacher practices deterred children from or prevented some play opportunities. Teachers at one multi-dimensional site would not allow children to freely move loose parts from one area of the play space to another. The second multi-dimensional site did not limit children from moving loose parts and toys around the play space. This one teacher practice changed play possibilities.

Indicators such as fencing and open green space (DeBord et al., 2005) are worthy of consideration in outdoor spaces. Heavy emphasis is put on assuring proper fencing around outdoor play areas for young children (American Academy of Pediatrics & American Public Health Association, 2011; DeBord et al., 2005; Harms et al., 2014). For various reasons programs scored higher or lower on safety and quality indicators specifically related to fencing and open green space. While these indicators are important, having or not having these two specific features does not necessarily assure or negate the

value of play taking place in each outdoor space. All areas observed in this study had large green spaces available for the children. Some of the programs readily allowed children to play in the large green spaces, while others did not allow this practice. Not every traditional space had fencing, but artificial barriers were imposed on the children deciding where they could play or not play. The multi-dimensional spaces had fences, but allowed children to play in the entire area of the fenced-in space.

All of the teachers and directors in this study understood the need to create child-centered play spaces. *The Preschool Outdoor Environment Measurement Scale (POEMS)* (DeBord et al., 2005) cues the observer to directly ask the teachers or directors, “How do you build on children’s interest outdoors?” While everyone in this study could answer with a few specific ways children’s interests were explored outdoors, the extent of execution of child-centered play and the teacher’s ability to manipulate their outdoor environment, due to other constraints and restrictions, often prevented their ability to follow through on full implementation of creating child-centered learning environments. The findings of this study challenge teachers to assure children “need not lose the vividness of early perception and mental life, but we will surely not retain and develop it if we very largely ignore it and fail to recognize its power” (Egan, 1985, p. 24).

Many studies have compared traditional and natural outdoor environments or specifically investigated children’s play in the natural environment (Blanchet-Cohen & Elliot, 2011; Bjørgen, 2016; Kuh et al., 2013). Other studies have looked at enhancing outdoor natural environment with props (Li et al., 2016). There are environmental scales to determine quality in outdoor space (DeBord et al., 2005; Harms et al., 2014). In this

study children were observed where they play in their outdoor space on a daily basis, with no enhancement of space. What the study found was a distinct need for teachers to consider in specific detail how to design socially rich play environments and opportunities regardless of the type of setting provided.

The benefits of outdoor play are understood to be an increase in vigorous activity, increased vitamin D intake, building immunity, reduction in symptoms of ADHD and improved sleep patterns (Office of Head Start, 2013). While all noteworthy, these can happen in any type of outdoor space. Future studies might further investigate the affordances children are allowed in their outdoor space to increase their play opportunities (Gibson, 1979; Heft, 1988). The movement to get children into natural play spaces (Louv, 2008; Rivkin & Schein, 2014) alone is not enough. Natural spaces just happen to provide more of those open-ended play opportunities, but a teacher can produce similar opportunities in more traditional spaces. If fully multi-dimensional spaces are not a reality for an early childhood program, steps can be taken to move the outdoor space to a more multi-dimensional area. This study showed multi-dimensional spaces were associated with more positive emotional affect and improved play opportunities for children.

#### How the Outdoor Environment Related to Types of Children's Play

In this study children in multi-dimensional spaces were observed engaging in greater amounts of constructive play than on the traditional play spaces. While 7 of the 8 children on the multi-dimensional spaces spent some part of their play time in constructive play, one child on the traditional space engaged in constructive play. Higher

rates of functional play were observed on the traditional play spaces, compared to the multi-dimensional spaces. All children in the traditional play spaces spent at least 12% of the 30-second play intervals in function play. Six of the 8 children in the multi-dimensional spaces spent less than 6% of their time in functional play. Based on these findings, future researchers might examine the difference in functional and constructive play episodes between the multi-dimensional and traditional play spaces in a more in-depth look.

Kuh et al. (2013) observed preschool children similar to the ones in this study, over the period of time their program transformed its outdoor space from a traditional to natural environment. In this study there was no outdoor transformation happening. The instances of constructive play observed on the multi-dimensional spaces were made possible because the teachers deliberately set up the environment for the children. These spaces provided wide varieties of open-ended play materials to engage children in play. The children were allowed to explore affordances (Gibson, 1979) from water play, to ramps, to drama, to pushing a wagon.

Some researchers assert the traditional playground model diminishes the value of several developmental domains, placing high value on the physical aspects of development yet neglecting the great potential the outdoor space yields for the social, emotional and intellectual domains (Czalczyńska-Podolska, 2014). Research has shown traditional outdoor environments encourage more functional (Hart & Sheehan, 1986) play. This is consistent with findings in this study. The multi-dimensional play areas

opened opportunity for social (Friedman, 2000) and highly engaged play episodes (Luchs & Fikus, 2013), such as the higher levels of constructive play observed in the multi-dimensional spaces in this study.

Children playing invented games with rules was seen 17% of the time on the traditional play spaces and but not on the multi-dimensional spaces. This highest level of play might be expected on the multi-dimensional space at higher rates than the traditional spaces. Possibly the children playing in the traditional spaces played invented games at higher rates due to the limited amount of other play materials available to them. On the traditional spaces the children created their own play.

In this study children were observed waiting to swing for long periods of time in the traditional play spaces. Once children got their time on the swing, the play was almost exclusively solitary, even when children were sitting in a tire swing with other children. This type of solitary play was negated during one observation when sleds were brought into the outdoor environment. During that observation there was little wait time on the tire swing, as children had other play opportunities.

#### Outdoor Environments and Association with Engagement in Play

While research suggests natural environments are optimal for outdoor play (Czalczyńska-Podolska, 2014; Kuh et al., 2013; Luchs & Fikus, 2013; Mårtensson et al., 2009; Miranda et al., 2016), barriers exist for children in preschool to access natural settings. Public preschool funding throughout the United States is increasingly going to voluntary preschool programs (Friedman-Krauss et al., 2018), often housed in public elementary schools with traditional play spaces. This notion was captured in field notes

the day the researcher observed the noticeable differences in play time for children in a traditional space when the element of snow was introduced and then removed:

Today was a page out of research books as far as what happens to children in traditional play environments. What struck me is that these environments are where a majority of the preschool children are playing in voluntary preschool settings in this state.

Children spend more time in visible social and emotional learning (Adams, 1993; Blanchet-Cohen & Elliot, 2011) on outdoor play spaces with more natural elements. Contrary to other studies (Blanchet-Cohen & Elliot, 2011; Miranda et al., 2016), this study showed social and emotional play episodes on all play areas, but the specific affect of those social and emotional episodes warrants future research.

Researchers look at the physical safety of children's outdoor environments (Jansson & Persson, 2010), but little consideration is given to the social and emotional safety of children during outdoor play. While the multi-dimensional play area observations showed positive affects of happy, proud and loved, the traditional space included more negative affects such as sad, frustrated, and lonely. In addition, episodes of what could be described as bullying behavior were seen on the traditional spaces and not observed in the multi-dimensional spaces.

Children's play time allows children to imitate the world around them and imagine what they can do. Play helps children make meaning of the world around them as they explore and recreate that they see (Smilansky, 1968). Children imitate their lives through play. When supplied the materials and environment to engage in deep play children will learn and grow. As this study showed, if children are not supplied materials



and environment, they will find ways to fill time, but not always through positive, rich play experiences.

In this study the traditional space also showed large episodes of time where children showed no affect, seeming to wander and have no direction in their play or socialization. Understanding outdoor time can be important in children's social learning can improve positive affect for young children (Burdette & Whitaker, 2005b). An excerpt from field notes brings light to this consideration:

While there were periods of time this little one was happy and times he was sad, a good deal of the observation he just was. I can't call it content, but almost call it lost. He went in and out of solitary and associative play. Most of time was spent in a game of running without a real goal. No one was being caught or captured. There didn't seem a goal, just running simultaneously. It was more than parallel, as there was a definite purpose and children playing in tandem, but no goal.

Words and phrases such as "lost," "no goal," "solitary," "he just was" do not seem optimal in discussing how young children are playing during their outdoor time. These types of descriptors were not isolated to this observation, but seen in other observations of children on the traditional play sites.

In this study there was a difference in the affect and play experience of the children on the multi-dimensional play areas compared to traditional settings. This comparison can be seen looking at two episodes that might be observed from afar as random running, but closer observation tells a different story. In the first observation example on the multi-dimensional spaces the random running had a direct purpose of play, a traditional game of tag. It was simply a game of tag, including a cheering section. On the traditional play spaces several instances of random running were observed. These

instances were seen with either no clear purpose or taking place in a good person versus bad person game. The good person versus bad person play was observed in different instances in the traditional space, but was not observed on the multi-dimensional sites. The good person versus bad person were coded as invented games with rules rather than dramatic play because the bad person would chase the good person, but the good person did not always agree to the chase, so it was not a dramatic play with mutual play agreement among all children involved. Children were playing games of chase and tag on the multi-dimensional spaces, but did not include elements of good and bad or evil.

Other studies have considered how children congregate more in the areas with natural elements such as the sand box and shaded grassy areas (Blanchet-Cohen & Elliot, 2011; Kuh et al., 2013) and how children's play lends to sociodramatic activities (Morrissey et al., 2017). However, the observations in this study could lay a path for future study specific to types of make-believe and games children play in different play environments and social implications in that make-believe and game type play.

Friedman (2000) found higher levels of social play in more multi-dimensional spaces and Vygotsky (1978) wrote that children learn best in social situations, which may have positive or have negative social implications. Observations in this study, while few, were enough to raise possible concerns with bullying and negative social implications of outdoor play time.

### Limitations of the Study

Due to constraints of the researcher, this study was a small sample in one region of the United States. The sample was a convenience sample and therefore did not necessarily represent the demographics of the region, specifically in terms of diversity. Because the primary observer was also the author of the study write-up there is a potential bias to the study. However, to minimize potential bias inter-rater reliability was first established on a neutral play space with a second rater and that rater simultaneously observed with the primary observer on 2 of the 8 play spaces for the traditional and multi-dimensional play spaces. This study could be considered a pilot study and a spring board for several larger studies that could further investigate key findings from the present study.

### Recommendations for Future Research

Findings from this study warrant future studies specific to the area of social and emotional play of young children in outdoor spaces. While differences were found in this study, the scale was small and potentially could be a pilot for a larger study of the same nature. Larger numbers of observations would allow for more statistical comparisons to be made in a future study. Specifically, further research might expand studies looking at outdoor play engagement in preschool programs. There is concern if children are spending periods of their free play time in a type of play pattern with no affect, as valuable social and emotional learning opportunities are lost.

A similar study could also be designed to investigate how demographics such as gender or race and program characteristics might impact findings. The small scale of this study did not afford analysis by demographics.

Additionally a future study might be focused more on affect, to see whether similar studies across similar programs would yield even greater differences. The type of play spaces might be broadened to include not only the traditional and multi-dimensional, but very natural spaces where there is little to no equipment or toys. Such research could further validate the findings of this study.

#### Implications for Change

More emphasis on how to equip teachers and administrators with knowledge to organize and direct these environments is needed. This movement will take deliberate action on the part of teachers and administrators in traditional early childhood program settings. Programs spend \$20,000, \$30,000 or more on playground equipment, simply by opening a catalog and purchasing equipment for the sake of having a playground. That equipment is designed almost exclusively for physical skill development or highly underused as children become quickly bored with the few pieces of equipment accessible to them and avoid the equipment all together. If children are very interested in a piece of equipment they may have empty wait time for long periods due to a limited number of children that may occupy any one piece of equipment at one time.

If all teachers were allowed to spend that \$20,000-\$30,000 on planning of the outdoor space, carefully considering all developmental domains of children as the outdoor space was created, higher quality outdoor environments might naturally follow.

These spaces could afford children the engaged free play opportunities they deserve in order to grow and mature not only physically, but also socially, emotionally and cognitively.

Future studies may further investigate what elements in outdoor environments help children create positive experiences. Closer examination into the factors contributing to children demonstrating negative affect and play with no affect or goal is warranted. When children spend periods of their free play time in a play pattern with no affect, valuable learning time is lost socially, emotionally and cognitively. Further research may look at outdoor social and emotional play engagement in preschool programs, possibly focusing on bullying and negative social implications of outdoor play time. Additionally, a future study might examine types of make-believe and games children play in different play environments.

Many researchers have shown well-constructed outdoor environments are an optimal environment for child-centered, active play (Coppie & Bredekamp, 2009). While there is an understanding of the theory to optimal outdoor play environments for children, current reality is different. In the state of Iowa children “require 30 minutes of physical activity per day for grades K-6” (Iowa Code 256.11(6), 2009, p. 3). Further stating the school “shall not reduce instructional time for academic courses in order to meet the requirements” (Iowa Code 256.11(6), 2009, p. 4). The Iowa Association of School Board’s Wellness Policy (2010a) recommends a “20 minute recess of moderate to vigorous activity per day”. While these policies specifically address kindergarten to grade 6, many preschool programs are housed in public schools where this policy is also

applied to preschool. Further, early learning best practice suggest one hour of outdoor time, over an 8 hour day (Harms et al., 2005, 2014). In addition to not addressing the significant social and emotional domains possible during outdoor play time, combination of these two policies suggesting small amounts of outdoor play time and codes with the additional directive that play time shall not reduce academic courses, creates a context in which outdoor play time is a time purely for short periods of physical development. Educators might help administrators, legislators and policy makers understand what policies, procedures and practices are needed to help assure creation of high quality outdoor learning spaces.

This thought is best summarized by a caption from the observer's field notes:

It started to become clearer after watching these two distinctly different sites today – “You’ll know it when you see it,” today I saw it. Clear, distinctive play. It does not have to be a natural setting, but there must be enough to engage children. Variety and open ended. The children didn’t get bored, there was too much to explore, from water play, to ramps, to drama, to pushing a wagon. It was muddy today, so the natural elements were not open, but that did not matter. There was great involvement in the multi-dimensional environment the teacher set up for the children.

In this study the types of play preschool children engage in while on different outdoor play spaces and their emotional affect in those spaces were examined. Future research is warranted to examine how outdoor play spaces are best created to provide children with long periods of free play where they can safely develop social and emotional competence.

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## APPENDIX A

## FIELD NOTE OBSERVATION FORM

[illegible]

## APPENDIX B

## PRESCHOOL OUTDOOR ENVIRONMENT MEASUREMENT SCALE (POEMS)

1 Domain 1: Physical Environment		Check <input type="checkbox"/> Y if item is present. Check <input type="checkbox"/> N if item is not present	
1.1. The space between parking and the center entrance allows <b>easy and safe drop-off/pick-up</b> for both children and parents. At least three (3) of the following are present:		<input type="checkbox"/> Y	<input type="checkbox"/> N
<input type="checkbox"/> parking close to the entrance <input type="checkbox"/> limited traffic <input type="checkbox"/> speed bumps	<input type="checkbox"/> sidewalks that lead to the entrance <input type="checkbox"/> pedestrian crosswalk <input type="checkbox"/> entrance covered from rain/snow <input type="checkbox"/> other	Total Checked →	
1.2. The center's external main entrance arrival area gives a <b>welcoming impression</b> of being child-friendly. At least two (2) of the following are present:		<input type="checkbox"/> Y	<input type="checkbox"/> N
<input type="checkbox"/> child art <input type="checkbox"/> colorful displays	<input type="checkbox"/> banner <input type="checkbox"/> plants <input type="checkbox"/> other	Total Checked →	
1.3. On the outside or inside of the main entrance door, there is a foyer, lobby, or covered porch that can serve as a <b>place for social interactions</b> between adults and children.		<input type="checkbox"/> Y	<input type="checkbox"/> N
1.4. The outdoor play and <b>learning areas are shielded</b> or buffered from the fumes and danger of adjacent parking areas (e.g., buffering by shrubs, solid fencing, wall, or distance from parked vehicles).		<input type="checkbox"/> Y	<input type="checkbox"/> N
1.5. The <b>outdoor area is enclosed</b> by a sturdy fence that is at least four (4) feet tall. The fence has a safe gate closure and has no entrapment spaces.		<input type="checkbox"/> Y	<input type="checkbox"/> N
1.6. The windows of the <b>classroom</b> observed that <b>face outdoors receive adequate sun and external shade</b> (e.g., trees, pergolas, retractable awnings, window shades, etc.) so that classrooms do not become too hot and glaring or too cold and dark.		<input type="checkbox"/> Y	<input type="checkbox"/> N
1.7. <b>Windows are at the children's eye level.</b>		<input type="checkbox"/> Y	<input type="checkbox"/> N
1.8. <b>Windows can be opened to allow fresh air.</b>		<input type="checkbox"/> Y	<input type="checkbox"/> N
1.9. <b>Classrooms</b> being observed <b>open directly outdoors into usable transition spaces</b> (e.g., deck, patio, pergola) large enough for noisy, messy activities to occur.		<input type="checkbox"/> Y	<input type="checkbox"/> N
1.10. <b>Ground surface drainage</b> in the outdoor area appears <b>adequate</b> (no gullies, sustained pooling of water, washed-out mulch, or soil erosion).		<input type="checkbox"/> Y	<input type="checkbox"/> N
1.11. The <b>overall impression of the outdoors is of a natural area</b> . The landscape contains at least five (5) of the following:		<input type="checkbox"/> Y	<input type="checkbox"/> N
<input type="checkbox"/> a variety of species of trees <input type="checkbox"/> a variety of species of shrubs <input type="checkbox"/> a variety of non-poisonous flowering plants (perennial or annual)	<input type="checkbox"/> vines <input type="checkbox"/> topographic variations (such as mounds, terraces, slopes) <input type="checkbox"/> a variety of safe ground surfaces (mulch, grass, pebbles) <input type="checkbox"/> smooth rocks	<input type="checkbox"/> logs <input type="checkbox"/> other Total Checked →	
1.12. <b>Outdoor space is easily accessible by children</b> , including those with special needs. Children of all abilities can play in the same vicinity, regardless of the abilities of children presently enrolled.		<input type="checkbox"/> Y	<input type="checkbox"/> N
1.13. <b>Shade is provided</b> to accommodate the total number of children in the classroom (Examples of shade: shadows cast by the building, manufactured shade structures, trees, pergolas, umbrellas).		<input type="checkbox"/> Y	<input type="checkbox"/> N
Total Items		<input type="checkbox"/> Y	<input type="checkbox"/> N
Total the number of items checked as present. Divide by the maximum number of items in this domain and multiply by 100.		Calculate % $\div 13 \times 100$ Domain 1 <input type="text"/> %	

## 2 Domain 2: Interactions

Check ☐ Y if item is present. Check ☐ N if item is not present

### Interactions with the Environment

**2.1.** At least one **child** is observed touching, noticing, and **sensing the natural environment** (such as cloud watching, smelling flowers, touching trees).

☐ Y ☐ N

**2.2.** Evidence of at least one **child-initiated activity with natural loose parts** (e.g., collections of objects, piles of pebbles, rows of sticks, etc.) is present.

☐ Y ☐ N

**2.3.** **Teacher/caregiver allows spontaneous or unplanned child-initiated activities** to occur within the natural environment (e.g., digging other than sand, forming snow angels, making mud pies, picking leaves).

☐ Y ☐ N

### Child-Child Interactions

**2.4.** Defined areas encourage child-to-child interactions. At least two (2) of the following are present:

☐ Y ☐ N

☐ child-sized picnic table

☐ puppet theater

☐ intersecting pathways

☐ two-person bench

☐ other

Total Checked →

☐ play store

☐ talk tubes

**Teacher/Caregiver-Child Interactions** (Note: Observe target teacher/caregiver, the one to be interviewed)

**2.5.** **Children approach the teacher/caregiver** with questions and seek support for their learning and teacher/caregiver responds appropriately.

☐ Y ☐ N

**2.6.** **Teacher/caregiver encourages or facilitates small group activity.**

☐ Y ☐ N

**2.7.** **Teacher/caregiver skillfully notices children's learning needs** by listening to and observing cues in order to guide their planning of learning activities. (Include in interview if not observed: *How do you decide what to do outdoors with the children?*)

☐ Y ☐ N

Response:

**2.8.** **Teacher/caregiver uses open-ended questions to explore children's interests** that lead to initiating learning activities. (Include in interview if not observed: *How do you build on children's interests outdoors? How do you know what they are interested in?*)

☐ Y ☐ N

Response:

**2.9.** **Teacher/caregiver does not let personal fears of wildlife or nature** (e.g., bugs, frogs) influence the children negatively. He/she responds appropriately. (Include in interview if not observed: *Have you encountered something you were afraid of or didn't like—a cricket, a slug, or an earthworm? How did you handle that with the children?*)

☐ Y ☐ N

Response:

**2.10.** **Teacher/caregiver models inquisitiveness and exploration** to support new learning.

☐ Y ☐ N

**2.11.** **Teacher/caregiver supports children's ongoing learning** without forcing involvement or intruding.

☐ Y ☐ N

### Parent-Child Interactions

**2.12.** **Parents are welcome in the outdoor areas** (observe evidence in handbook, newsletters, bulletin boards, photos. Include in interview if not observed: *Do parents spend time in the outdoor space? Probe this topic.*)

☐ Y ☐ N

Response:

**2.13.** **Adult-sized sitting spaces are available** for parents/relatives and children to interact outdoors.

☐ Y ☐ N

Total items

☐ Y ☐ N

Total the number of items checked as present.  
Divide by the maximum number of items in this domain and multiply by 100.

Calculate %

+ 13 x 100

Domain 2

%



3 Domain 3: Play and Learning Settings			Check <input type="checkbox"/> Y if item is present. Check <input type="checkbox"/> N if item is not present	
<b>Features</b>				
<b>3.1. The outdoor area contains an adequate variety of play and learning settings with constructed or manufactured elements.</b> At least four (4) of the following should be available for the children to use:			Y	N
<input type="checkbox"/> arts/crafts area <input type="checkbox"/> acoustic play area <input type="checkbox"/> sitting bench <input type="checkbox"/> woodwork bench	<input type="checkbox"/> easily supervised, cozy nook <input type="checkbox"/> anchored play equipment <input type="checkbox"/> crawl-through place (tunnel) <input type="checkbox"/> small stage (including puppet stage)	<input type="checkbox"/> raised deck <input type="checkbox"/> play house <input type="checkbox"/> balance beam or opportunities to balance <input type="checkbox"/> other	Total Checked →	
<b>3.2. The area contains an adequate variety of play and learning settings with natural elements.</b> At least four (4) of the following should be available:			Y	N
<input type="checkbox"/> sand play area <input type="checkbox"/> grass maze <input type="checkbox"/> safe stepping stones <input type="checkbox"/> rolling/climbing mound	<input type="checkbox"/> water play area <input type="checkbox"/> flower or vegetable garden <input type="checkbox"/> easily supervised, cozy natural nook <input type="checkbox"/> animal habitat (e.g., bird blind, rain garden, butterfly garden, logs, carpet "lift-up," bird feeder, ant farm)	<input type="checkbox"/> trees <input type="checkbox"/> other	Total Checked →	
<b>3.3. A multipurpose, open, grassy area</b> is available for large group games, running, dramatic play, music and movement, parachute play, social gatherings, etc. (Note: Measure this by imagining 15 preschool children holding hands in a circle.)			Y	N
<b>3.4. A variety of horizontal, elevated work surfaces</b> are available (e.g., picnic table, stump, counter, raised deck) for art, dramatic play, etc. There should be at least two surfaces present.			Y	N
<b>3.5. Circulation areas are ample</b> and pathways can be used by wheeled toys (sufficient space available to accommodate wheeled toys for the children in the group).			Y	N
<b>3.6. Play materials and equipment</b> are developmentally appropriate.			Y	N
<b>Materials and Loose Parts (observed)</b>				
<b>3.7. Enough outdoor toys are available</b> for all children to use without undue competition.			Y	N
<b>3.8. Play materials and toys can be reached</b> and played with by children.			Y	N
<b>3.9. Wheeled toys</b> such as tricycles, wagons, and wheelbarrows are available.			Y	N
<b>3.10. Storage is adequate</b> for outdoor toys, loose parts, and supplies.			Y	N
<b>3.11. At least four (4) manufactured loose parts are available:</b>			Y	N
<input type="checkbox"/> blocks <input type="checkbox"/> manipulatives <input type="checkbox"/> pieces of cloth	<input type="checkbox"/> skipping rope <input type="checkbox"/> hoses <input type="checkbox"/> sand toys	<input type="checkbox"/> balls <input type="checkbox"/> water toys <input type="checkbox"/> rings/hula hoops <input type="checkbox"/> chalk <input type="checkbox"/> other	Total Checked →	
<b>3.12. At least four (4) of these natural loose parts are available:</b>			Y	N
<input type="checkbox"/> smoothed sticks <input type="checkbox"/> mulch <input type="checkbox"/> shells	<input type="checkbox"/> river stones <input type="checkbox"/> pine cones <input type="checkbox"/> driftwood	<input type="checkbox"/> dirt <input type="checkbox"/> leaves <input type="checkbox"/> acorns <input type="checkbox"/> other	Total Checked →	
<b>3.13. A variety of decorative, colorful, and stimulating elements</b> , at least three (3), are used to enliven the character of the area:			Y	N
<input type="checkbox"/> banner <input type="checkbox"/> chime <input type="checkbox"/> decorative object (wreath, lantern, mosaic, topiary, fence weaving, weather vane, pinwheel, whirligig, whimsical sign, garland)	<input type="checkbox"/> wind sock <input type="checkbox"/> statue <input type="checkbox"/> gazing ball	<input type="checkbox"/> flag <input type="checkbox"/> cultural artifact <input type="checkbox"/> other	Total Checked →	
Total the number of items checked as present. Divide by the maximum number of items in this domain and multiply by 100.			<b>Total items</b>	
			Calculate % $\div 13 \times 100$	
			<b>Domain 3</b>	

**4 Domain 4: Program** Check ☐ Y if item is present, Check ☐ N if item is not present

**4.1. Art, drama, and music activities** are supported by the outdoor program with at least four (4) of the following present on the day observed:

<input type="checkbox"/> craft materials	<input type="checkbox"/> sound panel or instruments	<input type="checkbox"/> paint
<input type="checkbox"/> tape or CD player	<input type="checkbox"/> children's art displays	<input type="checkbox"/> easels
<input type="checkbox"/> singing	<input type="checkbox"/> markers, chalk, crayons, pencils	<input type="checkbox"/> props to support movement and dance
<input type="checkbox"/> puppets	<input type="checkbox"/> props to support dramatic play	<input type="checkbox"/> other
<input type="checkbox"/> stage (or deck for drama)	<input type="checkbox"/> clay, play dough	

Total Checked →

**4.2. Math and science activities** are supported by the outdoor program with at least four (4) of the following on the day observed:

<input type="checkbox"/> collecting, classifying, sorting	<input type="checkbox"/> magnifying glasses	<input type="checkbox"/> bird feeders
<input type="checkbox"/> collecting trays and containers	<input type="checkbox"/> hopscotch and number games	<input type="checkbox"/> blocks
<input type="checkbox"/> measuring temperature (e.g., thermometer on child's level)	<input type="checkbox"/> gardens, diverse plantings	<input type="checkbox"/> measuring length (e.g., ruler, tape measure)
<input type="checkbox"/> measuring volume (e.g., rain gauge on child's level)	<input type="checkbox"/> natural items to support exploration (shells, sharks' teeth, large pine cones, old wasps' nests, unusual rocks or minerals)	<input type="checkbox"/> other

Total Checked →

**4.3. Language activities** are supported by the outdoor program with at least four (4) of the following on the day observed:

<input type="checkbox"/> storytelling area	<input type="checkbox"/> books on tape	<input type="checkbox"/> microphone
<input type="checkbox"/> flannel board with materials	<input type="checkbox"/> labels on materials or signs	<input type="checkbox"/> puppets
<input type="checkbox"/> dry-erase board with markers	<input type="checkbox"/> children's books	<input type="checkbox"/> alphabet garden
<input type="checkbox"/> letters (stencils, plastic alphabet, letter puzzles)	<input type="checkbox"/> paper with writing materials (e.g., pencils, crayons, markers)	<input type="checkbox"/> other

Total Checked →

**4.4. Opportunities for physical activity and movement** are supported by the outdoor program with at least five (5) of the following (materials must support each item) activities:

<input type="checkbox"/> climbing	<input type="checkbox"/> throwing	<input type="checkbox"/> dancing	<input type="checkbox"/> lifting
<input type="checkbox"/> sliding	<input type="checkbox"/> kicking	<input type="checkbox"/> hopping	<input type="checkbox"/> balancing
<input type="checkbox"/> crawling through	<input type="checkbox"/> skipping	<input type="checkbox"/> jumping on/off	<input type="checkbox"/> other

Total Checked →

**4.5. Opportunities for various levels of children's physical abilities** are offered (e.g., jumping, sliding, climbing). Lesser and greater challenges are provided. At least two pairs are present (e.g., lower and higher climbing areas; tricycles with and without pedals).

**4.6. Opportunities for vestibular stimulation** are supplied by the outdoor program with at least two (2) of the following:

<input type="checkbox"/> rolling	<input type="checkbox"/> swinging	<input type="checkbox"/> merry-go-round	<input type="checkbox"/> gliders
<input type="checkbox"/> rocking	<input type="checkbox"/> sliding	<input type="checkbox"/> other	

Total Checked →

**4.7. There is evidence of both an indoor/outdoor connection and an outdoor/indoor connection** on the day observed (For example: both plants inside and books outside).

**4.8. At least one planned activity is linked to seasonal changes** (e.g., snow play, beach parties, apple-butter making, gardening, kite flying, lemonade stand, etc.). (Include in interview if not observed: *Within the last month, what special activities have you done outdoors? Activity must relate to the season or weather.*)

Response:

**4.9. Children go outside** at least two times each day for at least 30 minutes each period. (Include in interview if not observed: *When do you take the children outside?*)

Response:

Total items ☐ Y ☐ N

Calculate %  $\rightarrow 9 \times 100$

Domain 4  %



**5 Domain 5: Teacher/Caregiver Role**

Check ☐ Y if item is present. Check ☐ N if item is not present

**Teacher/Caregiver Interview (target teacher)**

**5.1.** Teachers/caregivers educate and communicate the **value of outdoor play** to parents, including natural settings and the needs for physical activity (documentation). *What measures do you take to inform families and parents about the use of outdoors? What kind of information do you convey to parents about the outdoors?*

Response: \_\_\_\_\_

☐ Y ☐ N

**5.2.** Teachers/caregivers **facilitate participation of families in outdoor activities** (e.g., outdoor field trips, picnics, planting a garden). *Tell me how families are included in outside activities or special outdoor festivals (must relate at least one example).*

Response: \_\_\_\_\_

☐ Y ☐ N

**5.3.** Teachers/caregivers extend **learning about outdoors** by either taking walking field trips (exploring local surroundings in the community such as a fire station, market, or post office) OR by driving to a location to explore an outdoor environment such as a park, farm, garden, or fountain. *Do you ever go outside the fenced (enclosed) play yard to explore other areas close by? If yes, where?*

Response: \_\_\_\_\_

☐ Y ☐ N

**5.4.** Children are exposed to **outside resource people** to enhance their outdoor experiences as a result of teacher's/caregiver's planning. *How are outside resources used to enhance any of your outdoor experiences? (Focus should be outdoors: gardener, storyteller outside, 4-H gardening club, Audubon Society, Scouts, etc.)*

Response: \_\_\_\_\_

☐ Y ☐ N

**5.5.** Teachers/caregivers **model environmental care** as part of the normal outdoor program with children (e.g. watering, weeding, staking plants). *Are children allowed to weed, rake, and water plants with teachers? If yes, tell me about it.*

Response: \_\_\_\_\_

☐ Y ☐ N

**5.6.** Teachers/caregivers **seek professional development opportunities** to enhance children's outdoor play and learning (e.g., books, web sites, continuing education, workshops, field visits, other resources). *Tell me other ways you have learned about using the outdoors with children.*

Response: \_\_\_\_\_

☐ Y ☐ N

**5.7.** Teachers/caregivers **attend to outdoor health needs**. *How do you prepare the children for extreme temperatures or wet weather? Responses should include at least three (3) of the following examples:*

☐ sunscreen  
☐ mittens/gloves  
☐ drinking water

☐ coats/jackets  
☐ umbrella  
☐ allergy provisions

☐ hats  
☐ boots  
☐ other

**Total Checked →**

☐ Y ☐ N

**5.8.** Teachers/caregivers **have a plan for outdoor first aid and emergency communication systems**. They have knowledge of emergency first aid, including safe management of bleeding injuries. *What written procedures do you use to handle emergencies or injuries when outdoors? (Review written plan and describe procedures.)*

Response: \_\_\_\_\_

☐ Y ☐ N

**Note:** To record a checkmark on teacher/caregiver items, the item must apply to the observed target teacher in each group observed.

**Total items** ☐ Y ☐ N

**Calculate %**  $\div 8 \times 100$

**Domain 5**  %

Total the number of items checked as present. Divide by the maximum number of items in this domain and multiply by 100.

## APPENDIX C

## OUTDOOR PLAY INVENTORY

Child's ID #:

Date:

M/F

Time (Start/Finish):

Class/Age:

	Behav/Minutes	0	0.5	1	1.5	2	2.5	Field Notes (min 3-6)
	Area							Play Themes
Parten *	Unoccupied							Constructive
	Solitary							Dramatic
	Onlooker							Game Type
	Parallel							Media Theme
	Associative							Describe:
	Cooperative							
	Functional							
Smil*	Constructive							
	Dramatic							
	Stand. Games with Rules							
	Invent. Games with Rules							
Init.*	Adult Involvement							Ignoring
	No Adult Involvement							Policing
	Adult Initiated							Guide
	Child Initiated							Active Involvement
	Adult Seeking Child							Describe:
	Child seeking adult							
Med	Media Play							
	Non-Media Play							
Supp Play	Object Play (Pre-fab)							
	Object Play (Natural)							
	Planning for Play							
	Hiding							
	Singing							
Energy	Aggressive							
	Risk Taking Play							
	Rough-and-Tumble							
	Vigorous play							
Nat Play	Dirt Play							
	Gardening							
	Sand Play							
	Water Play							
	Collecting							
	Awareness/Ob. Of Nature							
Gross Motor	Walking							
	Running							
	Biking							
	Building							
	Climbing							
	Dancing							
	Jumping							
	Kicking							
	Skiping							
	Sliding							
	Spinning							
	Swinging							
	Throwing							
	Tumbling/Rolling							
	Push/Pull							
	Other:							